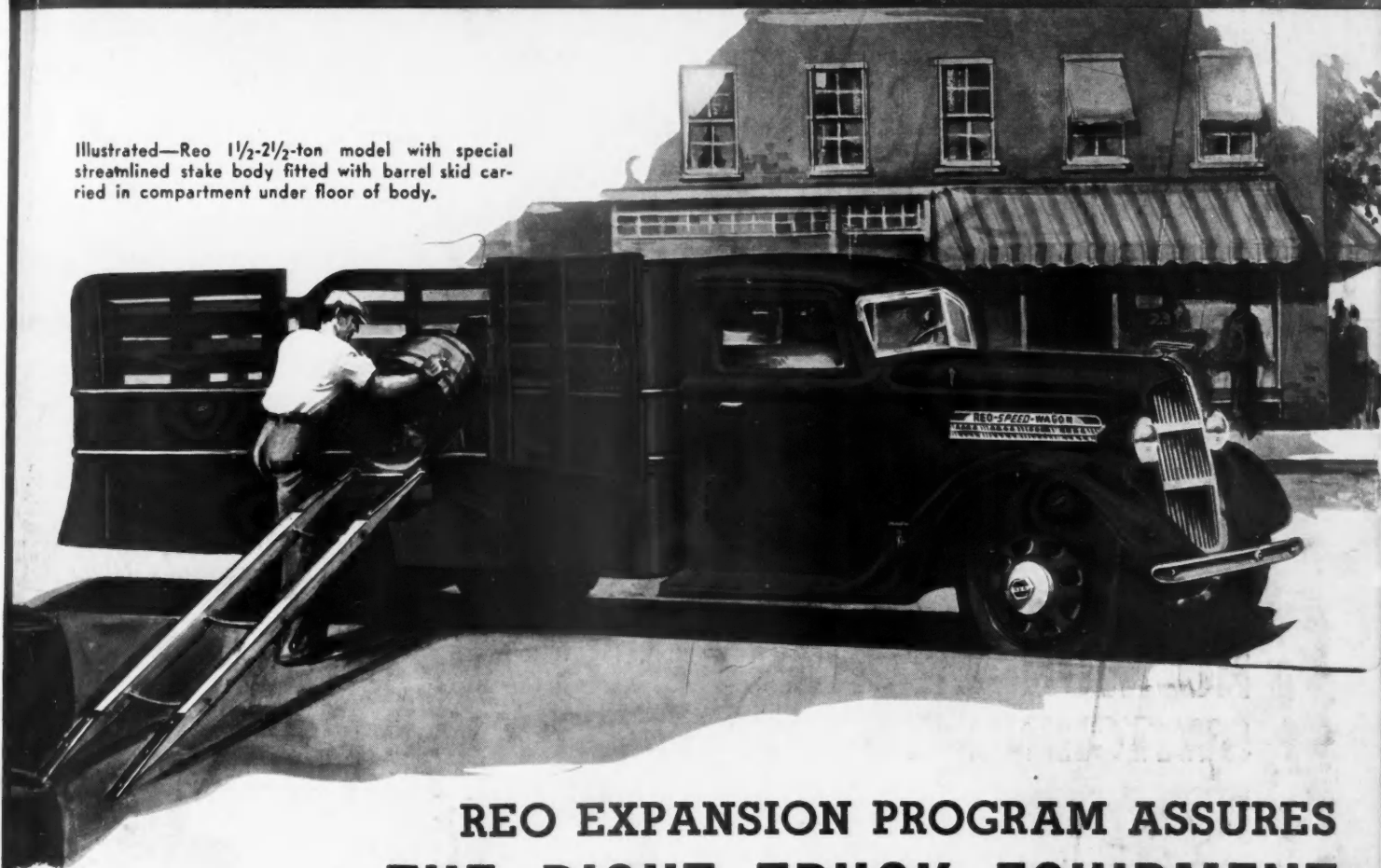


COMMERCIAL CAR JOURNAL

SEP 8 1937

THE MAGAZINE FOR FLEET OPERATORS

Illustrated—Reo 1½-2½-ton model with special streamlined stake body fitted with barrel skid carried in compartment under floor of body.



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America has long looked to Reo for the best in motor trucks and commercial hauling equipment. Now through its new expansion program Reo offers a more complete service than ever before.

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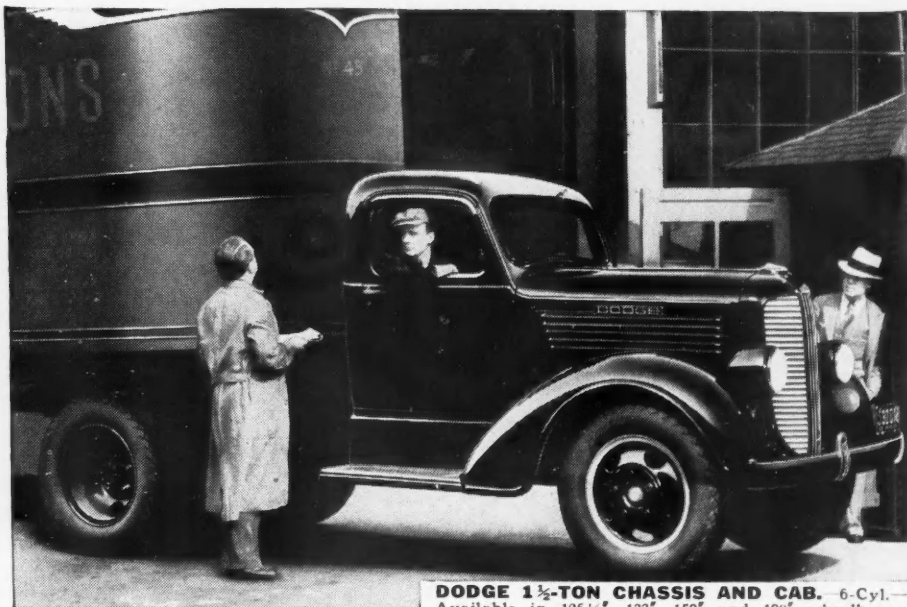
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REO MOTOR CAR COMPANY, LANSING, MICH

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NO WONDER THOUSANDS ARE SWITCHING TO DODGE TRUCKS

QUALITY FEATURES LIKE THESE MEAN BETTER PERFORMANCE



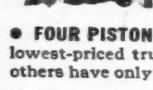
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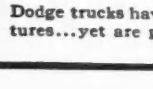
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Dodge trucks have dozens of extra-quality features...yet are priced with the lowest.

FROM coast to coast, an amazing number of truck buyers, who compare low-priced trucks feature by feature, are switching to Dodge. What Dodge extra-quality truck features mean in *performance* as well as *economy* is indicated by the users' statements printed on this page. Before you buy any truck, find out how Dodge quality features can save money for you. Get a show-down! See why thousands are switching! See your Dodge dealer today.

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OHIO



"After comparing various low-priced trucks for appearance and money-saving features, we recently switched to Dodge. We are pleased indeed with our choice and especially like the way Dodge saves us money on gas."—Joseph L. Baer, Cincinnati, Ohio.

NEW YORK



"We switched to the 1937 Dodge truck because it has extra-quality truck features. Our low-priced Dodge truck is giving us performance we never dreamed of getting from any truck—and at an actual saving in gas."—Fred F. Williams, New York, N.Y.

CALIFORNIA



"I have owned and driven trucks for 30 years and the performance of this new low-priced Dodge has simply astonished me. I am getting a lot more power on less gas than ever before. Right now it looks like I will save as much as \$95 on gas alone this year."—W. Savage, Glendora, California.

MISSOURI



"I am certainly glad I switched to Dodge. It is not only saving me money every mile on gas, but I never dreamed any truck could perform like it does. My check-up has proved to me that Dodge rides easier, handles easier, does a better hauling job for me."—Curt Heller, R. R. No. 6, Columbia, Missouri.

ILLINOIS



"I switched to Dodge and I am certainly glad I did for this truck gives me the kind of performance I never dreamed of getting in a low-priced truck. On top of getting more work done, my new Dodge is actually saving me around \$7 to \$8 a month on gas."—J. E. Tooper, Kankakee, Illinois.

WASHINGTON



"The performance of my 1937 Dodge truck has simply amazed me. I am actually getting more power at a saving in gas. It looks as though my new Dodge truck will save me from \$75 to \$80 in gas alone this year."—John Greiner, Nisqually, Wash.

COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

Reg. U. S. Pat. Off.

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C. A. MUSSELMAN, Pres.; J. S. HILDRETH, Vice-Pres. and Manager Automotive Division; G. C. BUZBY, Vice-Pres.

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COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

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Due to this, Texaco Marfak lasts twice as long as other greases . . . keeps equipment on the road.

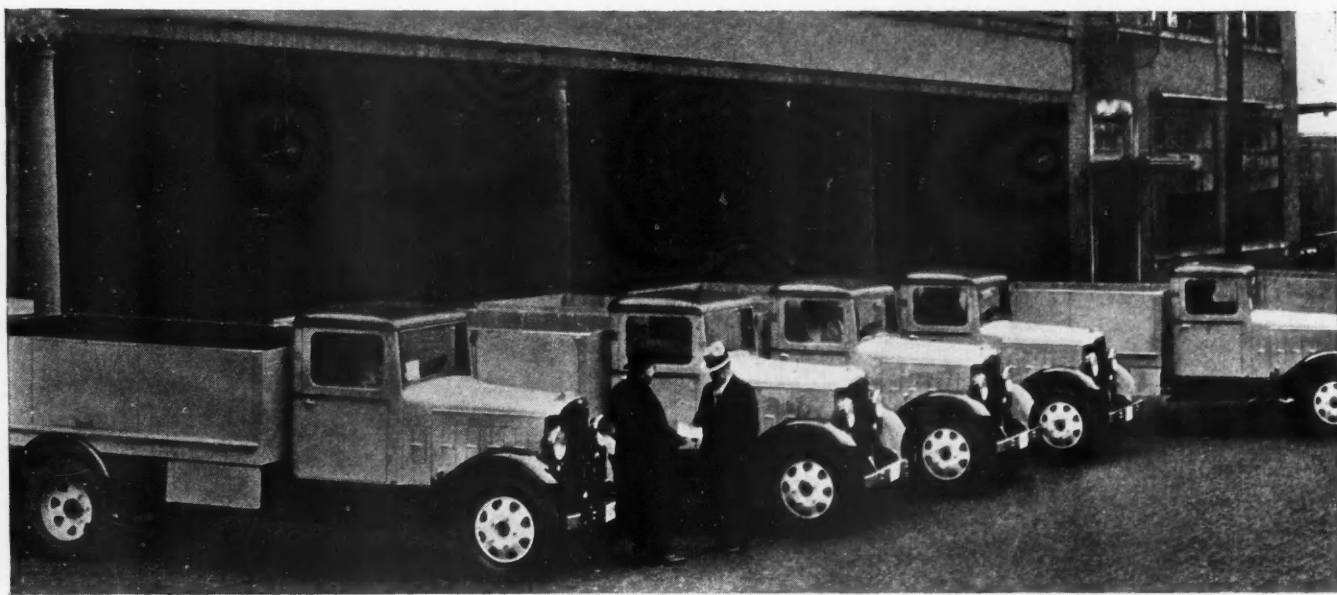
Many lubricants break down, thin out, leak, are washed away. Such greases make

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Trained automotive engineers are available for consultation on the selection and application of Texaco Automotive Products. Prompt deliveries assured through 2070 warehouse plants throughout the United States.

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COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

The OVERLOAD



COMMERCIAL CAR JOURNAL

Vol. LIV.

No. 1

SEPTEMBER, 1937

Overture

WE hope you like this issue. You'll find a slight refinement in appearance and a variety of subject. The ability factor discussion continues to hold the center of our stage. This time the performers are fleet operators. For convenience and ready reference we have made a chart of operator opinions, which you will find on page 21. Across from the chart you will find a form. On the form are nine questions. We urge every fleet receiving this publication to express its opinion of ability factors on this form. The questions are easily answered. This question of truck ability on grades is a vital one. It is extremely important that the operators express their views. A thorough and dispassionate discussion now may suggest a fair solution which will relieve the industry of passionate opposition later. Send in the form now.

Genesis 1:3*

SOME "light" reading has been included in this issue. There's the story about the fleet mechanic whose pastime is driving racing cars, and another about the Gerosa outfit in New York. Although the latter is about heavy loads it is still "light" reading. Springs lead a hard life but we've made it soft for you to understand what happens to them in service by means of diagrams.

* "Let there be light," of course.



"Love in the Oven" is the title of a Ray-Bell film, which might have well been named "Love-on-the-Tear" as it co-starred this General Motors fleet doing some of those traffic scenes for which Hollywood is famous. G-M in Los Angeles loaned both truck and men.

COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

Now, Not "Smother" Time

WE advise all readers to read carefully the article entitled "Will Regulation Smother Small Operators?" It is a realistic analysis of the trend of I.C.C. interpretations of the Federal Motor Carrier Act. When you've finished reading it you may want to scan our editorial comment on the After Hours page.

Rat-a-tat-tat-a-tat-tat

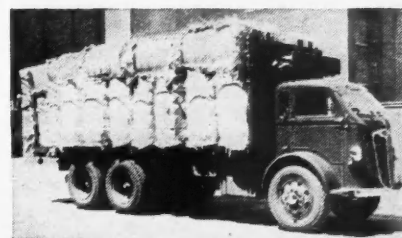
WE can't go on to other matters without once more telling the bugle to blow assembly for fleetmen and reading them the "order of the month" about Shop Hints, which we still want, which net \$5 per hint to the hintor, and which, so we have been told, are often worth much more than that to hintees, also known as readers. We repeat: Come one, come all; step right up and ring a fiver.

Safety Sign

IT was on U. S. route 1 that we saw an expressive safety sign on the tailgate of a truck. Beginning about the center large black-painted arrows pointed to the left and to the right. The left arrow directed the passing motorist to large, white-lettered "HEAVEN," and the right arrow to large, white-lettered "HELL." Maybe the latter should have been red-lettered.



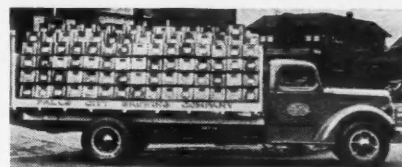
Sometimes there are roads and sometimes there are not in the Indiana dunes area south of Lake Michigan. But milk must get through despite the shifting sands and to make sure of it, Borden-Wieland division of the Borden Co. uses a special International model D-15. Its aluminum body weighs only 1100 lb., yet holds 30 cases. And the tires, mind you, are size 8.25 x 16.



It's one thing to worm 20-ton loads of paper stock in an out of New York City's traffic, and still another to negotiate a 21-per-cent-grade ramp in the bargain. But it seems to be all in the day's work for this 6 x 2UT Autocar fitted with Tru-Tor third axle unit. The owner: Mitchell Paper Stock Co., Inc., 437 W. 16th St.



If your chimney was falling down or your roof leaked and you were within range, chances are you'd call The Commercial to do the job. Ready for instant action they'd come hot-footing in a brand new Diamond-T work shop, replete with everything from ladders to pointing tools.

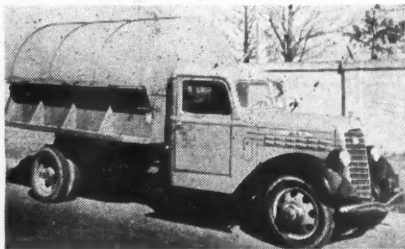


Down in Kentucky they have blue grass Colonels and Tru-Bru beer. So to keep its place in the world, Falls River Brewing Co., Louisville, just annexed this Mack model EH, which hauls 300 cases on its 15 1/2-ft. body without a mishap owing to the V-type platform.

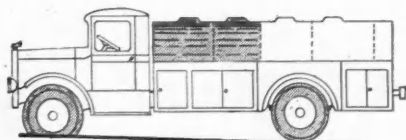
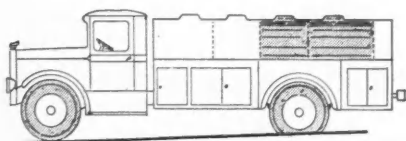
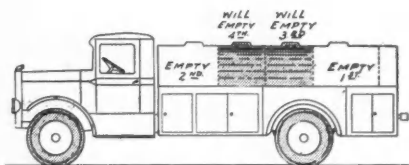
The OVERLOAD



Also from New York hails this Mack Jr. ambulance recently put into service by the local chapter of the Red Cross. It serves the dual purpose of supplying ambulance service to those who could not otherwise afford it, or to hospitals who do not have ambulances of their own. We wouldn't know, but since everything inside is removable, we suspect it may be used for other than human loads on the side.



Pretty swell swill it is that travels in this Mack Jr. rear-dump garbage hauler fitted with all the modern gadgets. When the removable top's in place it holds a total of 9 cu. yd., and trick feature of those three sliding sections is that they can all cluster on one side, leaving the other side entirely open for loading.



From Tide Water Oil Co. comes this worthwhile tip on the proper unloading of tank trucks. It's well to remember that loads as well as brakes can be out of balance

A Drop of Prevention

EVEN in the case of replacing light bulbs an ounce of prevention is worth a pound of cure. In fact "pounding" is sometimes no cure at all. There is irony too in the fact that the better the bulb the longer it operates satisfactorily and the more likely it is to stick tight. We are told to tell you that not an ounce but merely a drop of "dag" colloidal graphite in water, wiped on the socket as it is installed, will prevent corrosion and insure easy removal.

Merrie England Note

THE darndest things can happen under regulation. Over in England where they have plenty of it the chief of a fire department who has been driving for 28 years had to take a test from the Ministry of Transport. He was told he did not know how to drive and was refused a license. The Government experts passed a fireman who learned all he knows about driving from the fire chief. The chief is considering taking up flying.

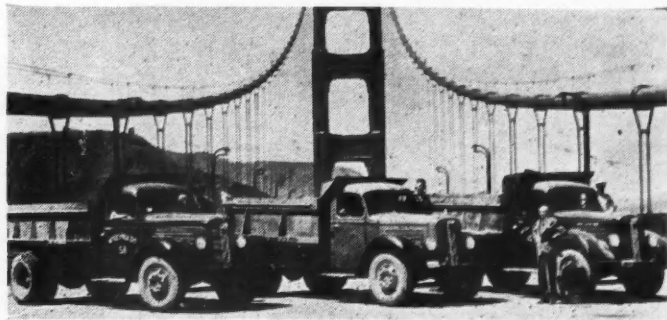
Sugah! Cain Y'All Take a Tip

MAYBE you've thought of Celotex only as something to use in making a spare room out of your attic or a bar-room out of your basement. If you have, change your ideas because they tell us that under the roof of the truck cab and under the floor boards its insulating qualities help to make the cab a lot more comfortable. That goes also for moving and furniture van bodies. Down South fleets may already know that sugar cane fibre is what it has most of.

Gold Bloom Bloomer

THANK heaven the editorial eraser isn't overworked correcting published mistakes. So seldom must we use it that it's practically no embarrassment at all to admit a mistake. That goes for the Gold Bloom picture on page 19

Five GMC T-46 trucks (like the three at right) were commissioned to dump the surfacing material on the Waldo approach of the Golden Gate bridge. So perfect was their schedule, the last load landed the day before the bridge opened



of the August issue. We said it was a Transportation Engineers' cab-over-engine Ford conversion. 'Twasn't. 'Twas a conversion by Eaglesfield & Irish, of Indianapolis. So there!

Who Got the Steaks?

FEDERAL Motor Truck definitely did not get a bum steer the other day. It was a 1200-pounder that escaped from a truck and sought refuge in the factory. It must have been the word "Federal"—with its promise of relief—that confused the big hunk of steak. The beast was lassoed and slain. It's important to know who got the steaks because we're on our way to Detroit.

Lingo the Drivers Slingo

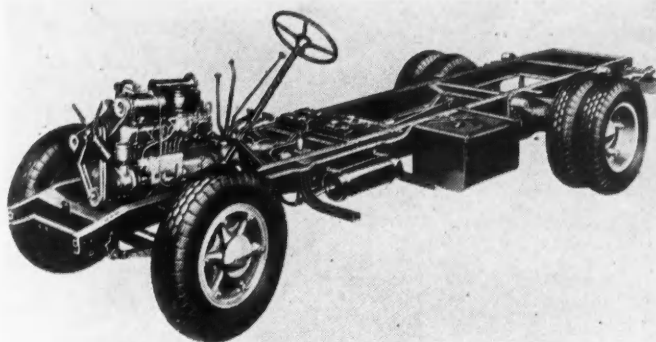
THE lingo that truck drivers sling is quaint and expressive. The New York World Telegram made a small collection of them and published them with definitions. Let us give you a few of them before making an offer: A'Babe—any female between 18 and 80 (see Hi Toots); Anchor—emergency brake; Bleeding—letting air out of tires; Creeper—low gear; Donkey—tractor; Gipsy—a tramp truck; High Tailing—speeding behind another truck; Hi Toots—salutation for A'Babe; Jennie—any waitress; Kicking—throwing gears to neutral; Monkey—a loader; Madmen—hijackers; Pushing—driving; Smoke—fog; Thumber—hitch-hiker; Tricycle—speed cop's cycle with sidecar.

25¢ Times × = ?

THE offer is this: We will pay 25 cents for each unusual word and definition accepted that belongs in a glossary of truck driver lingo. First come, first accepted. Contributions must be in by Oct. 1. Everybody welcome. Need we remind you to send in only printable words and to post this offer on your driver bulletin board?

CARS

TO THE *Ground*



When we squeezed a description of Studebaker's new J20D Diesel truck into the last issue, there was no picture at hand. But here it is complete with Hercules DJXB, 260-hp. engine. Power supply for the 24-volt starting system is also apparent.

Control Chapter

You never can tell where ideas will come from. Henry Stein took time off from selling neckties in a Mankato, Minn., clothing store long enough to develop and patent a combination accelerator and brake control. It is a split pedal, the operator using one side or the other for ordinary operation but for an emergency stop he jams down on both and the brake pedal travel causes the throttle to close. Mr. Stein is now playing with the sordid thought of selling the idea for a reasonable sum.

Transmission Topic

After the command performance of the automatic transmission in Detroit mentioned in these columns in July, the car returned to these parts where this department got a chance to be guest driver. After a few false gropes for a shift lever that didn't exist and kicks for a clutch pedal that was already depressed, we did very well. We lolled along in traffic thinking of nothing but the brake pedal and accelerator and what a grand institution the machine age is. We were even tempted to go around the block rather than back up because we had to pre-select for reverse.

Gasoline Gage

If any of the new and untried drivers in your fleet are inclined towards larceny they can be foiled at least so far as knocking down on fuel goes. A new gage, which has come to this department's attention,

provides the fuel tank with a screen which prevents syphoning fuel out of the tank. The gage fits in the filler neck which accurately measures the amount of fuel that actually gets into the tank.

Shift Sortie

There will soon be real competition among the producers of gadgets for making gear shifting less bother. Our agent-in-charge-of-products-changing-hands reports that at least one company has strengthened its position by acquiring some complimentary patents for a device which it already has. Likewise he reports that remote shifting will be seen on two cars for the first time at the auto show and there is a strong possibility that a third will keep the first two company.

Model Multiplicity

One of the large producers of light trucks is seriously going at the development of three new models. The particular significance of this move is in the fact that through all these years this manufacturer has contented itself with two base models. Our reporting agent was flabbergasted.

Weight Wangling

At a meeting of this department's board of directors one of the directorate toyed with the idea of using removable bodies to circumvent unequitable weight laws instead of paying attention to the business at hand. The idea being to shift bodies when weird laws specify both an unladen

weight as well as gross weight for license classification is more or less justified since the unladen weight is nothing of importance if the gross weight is kept in line. Anyhow this species of speculation is a better avocation for directors than drawing ladies with whiskers on scratch pads during meetings.

Model Matters

Just too late to get between this month's covers comes the Diamond-T description of the new camelbacks. The print shop foreman frowned and said "no" when we made a noble attempt to cheat. And then just to make life more aggravating a description of a new Stewart conventional three tonner arrived tardily. The next issue should be replete with the descriptions.

Water Whisper

One of our teetotalers has found a new use for water. It is to be used in a new brake at the rear of the transmission for relieving the regular brakes of the job of snubbing when coming down long grades with heavy vehicles. It is a fluid flywheel arrangement which will come under the fancy name of hydromatic. The idea comes from oil field equipment accompanied by no complaints.

FREE

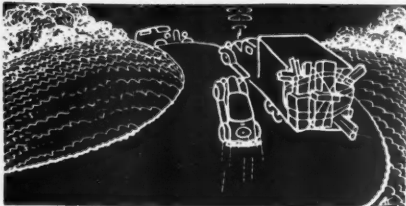
A number of worthwhile pieces of literature, coming to our attention within the past month, are grouped under the heading of Literature on page 42. Check the numbers below which correspond to the numbers given the literature described, and we'll see that you are supplied. Mail to the Editor, Commercial Car Journal, Philadelphia, Pa.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

Name
Title
Firm Name
Address
City
No. Trucks No. Cars



Latest in the fine art of making-a-Ford-not-look-like-a-Ford is Craftstying produced by Metalcraft Corp., St. Louis, Mo. The complete outfit includes the fancy grilles, rear wheel cover and bumper, and radiator wings.



Fleet Operators SAY SLOW MOVING
VEHICLES ARE A SAFETY HAZARD
AND TAKE A STAND IN REGARD TO

ABILITY FACTORS

BEFORE presenting the comments of fleet operators on the subject of ability factors, and our own comments on the tabulated replies received from fleet operators which appear on the page opposite, it would be well to summarize those replies. Thus:

SURVEY QUESTION 1—78 personally considered a slow-moving vehicle a safety hazard on hills; 10 said they did not, and one split the ticket by saying trucks were not but tractor-trailer trains were.

SURVEY QUESTION 2—79 favored the adoption of an ability factor to make trucks move faster on hills; 6 did not; one said it was not practical, and three gave no opinion.

SURVEY QUESTION 3—41 said they favored an ability factor of 4 per cent grade at 20 m.p.h.; 8 favored a factor higher than 4 per cent at 20; 3 wavered between a factor of 3-4 and 3½-4 at 20; 2 favored 4 at 20 for trucks and 2 and 3 per cent at 20 for trains and six-wheelers; 10 definitely favored factors lower than 4 at 20; 15 gave no answers, 8 gave incomplete replies; one did not favor a factor and another thought it impractical.

SURVEY QUESTION 4—53 said 75 to 100 percent, inclusive, of their present trucks could meet the factor they favored; 20 gave replies under 75 per cent and 16 did not answer.

SURVEY QUESTION 5—23 asked no time extension to meet the factor they favored; 34 asked 1 to 3 years; 17 asked 3 to 5 years; 3 asked 5 to 10 years, and 12 did not answer.

SURVEY QUESTION 6—12 said they now specify an ability factor of 4 per cent at 20 or better; 12 definitely specified a factor under 4 at 20; 41 said they did not specify a factor; 6 gave incomplete answers; 17 gave no answer, and one gave a variable.

SURVEY QUESTION 7—60 said from 75 to 100 per cent, inclusive, of their present equipment would meet a safety factor of 4 per cent grade at 20 m.p.h.; 20 said less than 75 per cent would meet it, and 9 did not answer.

SURVEY QUESTION 8—34 said their
(TURN TO PAGE 62, PLEASE)

COMMERCIAL CAR JOURNAL ABILITY FACTOR SURVEY

1. Do you personally consider a slow-moving vehicle a safety hazard on hills?
2. Do you favor the adoption of an ability factor (per cent grade in miles per hour) to make trucks move faster on hills?
3. What ability factor do you favor for safety?
4. What percentage of your present trucks would meet the ability factor you favor?
5. How many years of grace would you want to bring all your trucks under the ability factor you favor?
6. What ability factor do you now specify on your trucks operating in hilly country?
7. What percentage of your present trucks and tractors will meet an ability factor of 4 per cent grade at 20 m.p.h. with the loads they are now carrying?
8. What effects would a 4 per cent at 20 m.p.h. ability factor have on your
 - (a) Maintenance costs?
 - (b) Total operating costs, remembering that more work can be done with faster moving trucks?
9. With the present trend toward lower driver hours and higher driver wages, isn't it economically imperative to speed up trucks in order to get more work done to offset the added cost of operation?

FOR GROUPING PURPOSES --

What is the vocational classification of your fleet? ..
(Department store, petroleum, over-the-road, etc.)

How many Trucks (Exclusive of tractors) do you operate? ..

How many Tractors? .. How many Trailers? ..
(Give estimates above if actual figures are not readily available.)

Give your name and affiliation only if you care to: ..

Fleet Men: Fill in and mail to the Editor, Commercial Car Journal, Philadelphia, Pa.

COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

OPERATORS' OPINIONS IN ABILITY FACTOR SURVEY

Identification Number	Vocation	Survey Question:				1	2	3	4	5	6	7	8		9
		Location	No. trucks operated	No. tractors	No. trailers	Is slow-moving vehicle a hazard on hills	Do you favor ability factor adoption	What ability factor do you favor	% Your trucks meeting factor favored	Years' grace needed to conform	Ability factor you now specify for hills	% your trucks meeting 4% @ 20 factor	Effect of 4% @ 20 m.p.h. ability factor on your	Total operating costs	
1	Over-the-road	PC	75	0	4	Yes	Yes	4% @ 20	100%	None	4 @ 20+	100%	None	None	Yes
2	Garbage Collection	MA	106	0	0	Yes	Yes	3% @ 20	100%	3 Yr.	None	100%	Increase	Increase	No
3	Public Utility	NE	143	0	0	Yes	Yes	4% @ 20	15%	10 Yr.	None	15%	Very slight	Lower	No
4	Bakery	MA	94	1	1	No	Yes	4% @ 20	100%	None	None	100%	None	None	Yes
5	Food	MA	210	1	5	No	Yes	x	100%	None	x	100%	x	x	No
6	Ice Cream	MA	200	0	0	Yes	Yes	4% @ 20	95%	1 Yr.	x	95%	None	x	No
7	Over-the-Road	MW	120	141	237	Yes	Yes	4% @ 20	20%	3-4 Yr.	x	20%	x	x	x
8	x	NE	168	13	21	Yes	Yes	4% @ 20	85%	2 Yr.	None	(a)	None	x	x
9	General Hauling	MA	600	0	0	Yes	Yes	4% @ 20	100%	None	x	100%	None	x	Yes
10	Parcel Delivery	PC	200	5	5	Yes	Yes	4% @ 20	80%	5 Yr.	None	80%	None	None	Yes
11	Petroleum	MW	160	12	12	Yes	Yes	4% @ 20	80%	4 Yr.	None	80%	Increase	Increase	Yes
12	Over-the-Road	PC	85	15	50	Yes	Yes	4% @ 20	75%	2 Yr.	None	75%	Lower	Lower	Yes
13	Highway Dept.	PC	85	1	6	Yes	Yes	4% @ 20	100%	None	None	100%	x	x	Yes
14	Truck Leasing	PC	700	0	1	Yes	Yes	x	x	x	x	100%	x	x	No
15	Petroleum	MW	60	3	3	Yes	Yes	4% @ 20	100%	None	None	100%	x	x	Yes
16	Public Utility	PC	1400	0	0	Yes	Yes	6% @ 10	100%	None	None (b)	100%	Increase	Lower	Yes
17	Public Utility	MW	460	37	37	Yes	Yes	5% @ 25	60%	2 Yr.	5% @ 25	60%	Increase	Little diff.	Yes
18	Road Work	RM	123	0	8	Yes	Yes	5% @ 20	33%	3 Yr.	None	33%	Lower	Lower	Yes
19	Petroleum	PC	100+	7	11	Yes	Yes	x	x	3 Yr.	x	0	Lower	Lower	Yes
20	Public Utility	SE	200	2	2	Yes	Yes	4% @ 20	98%	x	None	95%	Increase	Increase	No
21	x	RM	600	0	0	Yes	Yes	4% @ 20	100%	None	None	100%	Lower	Lower	Yes
22	Highway Dept.	MW	198	116	123	Yes	(c)	x	90%	x	None	90%	(cc)	x	Yes
23	General Contracting	NE	325	12	16	Yes	Yes	4% @ 18	x	3 Yr.	None	x	x	Increase	Yes
24	Road Work	NE	374	27	20	Yes	x	x	x	x	x	100%	None	None	Yes
25	Construction	MA	1555	0	0	Yes	Yes	4% @ 20	75%	3 Yr.	None	75%	Very slight	None	Yes
26	Meat Packing	MW	2950	200	225	Yes	Yes	(d)	90%	2-3 Yr.	1-2%	50%	Increase	Increase	Yes
27	Public Utility	MW	145	0	51	Yes	Yes	4% @ 20	90%	2 Yr.	3% @ 15	90%	Increase	Increase	Yes
28	Over-the-Road	NE	50	75	100	Yes	Yes	4% @ 20	100%	None	(e)	100%	None	None	x
29	Highway Dept.	MW	512	x	x	Yes	Yes	x	x	3-5 Yr.	None	x	None	x	Yes
30	Public Utility	SW	113	0	10	Yes	Yes	x	x	2 Yr.	x	100%	None	None	No
31	Petroleum	MA	1100	x	x	Yes	Yes	4% @ 20	x	3 Yr.	Varies	x	Lower	Lower	x
32	Ice and Coal	SE	158	0	0	Yes	Yes	x	0	x	None	75%	None	None	Yes
33	Petroleum	MW	490	24	28	Yes	Yes	4% @ 20	80%	5 Yr.	None	80%	Increase	Increase	Yes
34	Public Utility	MW	103	0	0	Yes	Yes	4% @ 20	100%	None	None	100%	None	x	Yes
35	Public Utility	MW	145	x	x	Yes	Yes	x	x	None	x	x	x	x	Yes
36	Highway Dept.	MW	180	x	2	No	Yes	4% @ 20	90%	2 Yr.	None	90%	Lower	Lower	Yes
37	Public Utility	MW	178	9	14	No	x	3% @ 20	10%	5 Yr.	x	x	Increase	x	Yes
38	Furniture Delivery	MW	102	0	0	No	No	x	x	x	None	100%	None	None	No
39	Government Service	RM	132	0	0	Yes	Yes	(e)	x	x	x	x	x	x	Yes
40	Ice Cream, Dairy	MW	182	3	8	Yes	Yes	4% @ 20	100%	None	None	100%	None	Lower	Yes
41	Department Store	MW	110	4	9	Yes	Yes	4% @ 20	100%	None	None	100%	None	None	Yes
42	Government Service	RM	135	0	4	No	Yes	4% @ 20	60%	1 Yr.	3% @ 15	100%	None	None	Yes
43	Road Work	MW	158	0	1	Yes	Yes	4% @ 25	70%	2 Yr.	x	70%	None	x	Yes
44	Highway Dept.	NE	150	2	5	Yes	Yes	6% (f)	60%	5 Yr.	10% (f)	90%	Lower	x	Yes
45	x	RM	200	0	0	Yes	Yes	4% @ 20	90%	1 Yr.	5% @ 20	90%	Lower	x	Yes
46	Public Utility	MW	146	3	20	Yes	Yes	4% @ 20	60%	5 Yr.	None	60%	x	x	Yes
47	Ice, Coal, Oil	MA	580	6	10	Yes	Yes	3-4% @ 20	90%	4 Yr.	3% @ 35	85%	None	Increase (g)	Yes
48	Meat Packing	MW	2275	100	125	No	Yes	3-4% @ 20	(h)	x	3-4% @ 20	(i)	Increase	Increase	No
49	Public Utility	MA	195	2	6	Yes	Yes	4% @ 20	50%	3 Yr.	3-4% @ 20	57%	Lower	Lower	Yes
50	Highway Dept.	MW	1434	20	15	Yes	Yes	25 m.p.h. (f)	75%	1 Yr.	x	80%	x	x	Yes
51	x	MW	46	8	45	Yes	Yes	x	x	2 Yr.	x	x	x	x	Yes
52	Petroleum	MW	51	1	2	Yes	Yes	4% @ 20	100%	None	x	100%	None	x	x
53	Highway Dept.	MW	840	0	0	Yes	Yes	4% @ 20	60%	3 Yr.	None	60%	Not much	Not much	Yes
54	Over-the-Road	MW	100	100	115	No	No	x	x	5 Yr.	None	90%	None	x	Yes
55	Municipal	MW	200	20	50	Yes	Yes	(j)	75%	4 Yr.	None	50%	Lower	Lower	Yes
56	Bakery	MA	352	4	5	Yes	Yes	2-3% @ 20	100%	None	None	Few	Increase	Increase	Yes
57	Food	MW	800	6	8	Yes	Yes	5% @ 20	75%	2-3 Yr.	4-4% @ 20	85%	Lower	x	No
58	Dairy Products	MW	187	4	14	Yes	Yes	x	0	4 Yr.	None	0	Not good	x	Yes
59	Food	MW	150	450	600	Yes	Yes	3-4% @ 20	90%	2 Yr.	4% (f)	75%	Lower	Increase	Yes
60	Local Express	MW	122	6	20	Yes	Yes	4% @ 25	x	3 Yr.	x	x	x	x	x
61	Manufacturer	MA	100	150	250	Yes	Yes	3% @ 18	40%	7-8 Yr.	3% @ 18	0	x	x	Yes
62	Government Service	MA	205	0	0	Yes	Yes	4% @ 20	80%	2 Yr.	None	80%	Increase	None	Yes
63	Highway Dept.	MW	150	4	10	Yes	Yes	4% @ 20	0	5 Yr.	3% @ 20	0	Lower	Problematic	Yes
64	Petroleum	MW	200	0	0	Yes	Yes	4% @ 35	95%	1 Yr.	4% @ 35	95%	Very little	None	Yes
65	Beer	MW	146	0	0	Yes	Yes	4% @ 20	95%	1 Yr.	None	95%	None	x	x
66	Petroleum	SW	187	3	140	Yes	Yes	3-4% @ 20	100%	None	3-4% @ 20	85%	Lower	Increase	Yes
67	School Comm.	SE	235	85	85	Yes	Yes	5.5% direct	0	5 Yr.	4.3% direct	50%	Lower	Lower	Yes
68	Milk	MA	300	2	3	Yes	Yes	4% @ 20	100%	None	None	100%	None	x	x
69	Petroleum	MA	250	40	40	Yes	Yes	4% @ 20	50%	5-6 Yr.	4% @ 20	(k)	Very little	Very little	Yes
70	Over-the-Road	MA	350	0	0	Yes	Yes	25 m.p.h. (f)	80%	2 Yr.	20 m.p.h. (f)	100%	x	x	Yes
71	Government Service	US	40000	6000	2000	Yes	Yes	4% @ 25	100%	None	None	100%	Lower	Lower	No
72	Bakery	MA	1500	0	0	Yes	Yes	6% @ 25	75%	5 Yr.	None	75%	None	Increase	No
73	Ice Cream and Milk	MA	169	0	0	Yes	Yes	(l)	85%	4 Yr.	3% @ 20	85%	Increase	Increase	No
74	Petroleum (m)	MA	115	70	70	Yes	Yes	3-4% @ 20	100%	None	3-4% @ 20	100%	None	Lower	Yes
75	Public Utility	MA	175	5	10	Yes	Yes	3% (f)	95%	3 Yr.	3% (f)	90%	None	Lower	Yes
76	Public Utility	SE	197	0	0	Yes	Yes	4% @ 20	90%	3 Yr.	2% @ 38-40	90%	None	Increase	Yes
77	General Hauling	MA	370	0	0	Yes	Yes	x	90%	2 Yr.	5% @ 20	90%	None	Increase	Yes
78	Dairy	MA	260	4	5	Yes	Yes	4% @ 20	60%	4.5 Yr.	None	60%	None	x	x
79	Petroleum	NE	115	8	8	Yes	No	3 @ 20 (n)	65%	3 Yr.	40%	x	x	x	Yes
80	Ice Cream and Milk	MA	1400	30	30	Yes	Yes	30 m.p.h. (f)	60%	2 Yr.	None	90%	Very little	Very little	x
81	Public Utility	MA	55	0	0	Yes	Yes	4% @ 20	100%	None	4% @ 20	100%	None	None	x
82	Public Utility	MA	x	x	x	Yes	No	(o)	x	x	None	75%	None	Increase	Yes
83	Laundry	MA	169	0	0	Yes	Yes	4% @ 20	100%	None	None	100%	None	None	x
84	Highway Dept.	SE	2192	5	5	Yes	Yes	4% @ 20	90%	3 Yr.	None	90%	x	x	Yes
85	Petroleum	SW	53	0	0	Yes	Yes	4% @ 20	100%	None	4% @ 20	100%	(p)	(p)	Yes
86	Food	PC	210	0	0	No	No	x	x	x	x	100%	x	x	x
87	Petroleum	MW	x	x	x	Yes	Yes	4% @ 20	100%	None	4% @ 20	100%	None	None	Yes
88	Department Store	MA	405	5	8	(q)	No	(r)	100%	None	(s)	(t)	None	None	No
89	Petroleum	MA	x	x	x	No	x	3% @ 20	x	x	x	x	x	x	x

x No answer
(a) Trucks 85%; tractors 0
(b) New trucks can do 60% @ 20
(c) Not practical
(cc) Eliminate old and costly equipment
(d) 1-2% high gear
(e) 1 cu. in. disp. per 100 lb. gross load
(f) Answer not completed
(g) Total costs will be higher but

experience shows we move more tonnage at less cost with faster trucks
(h) Large % in hilly country; none in flat
(i) Possibly all in 3rd gear if we opened governors; but none as they now operate
(j) 4% @ 20 for trucks; 2% @ 20 for tractor-trailers and six wheelers
(k) 50% trucks; none for tractor-trailers
(l) 4% @ 20 for trucks; 3% @ 20 for tractor-trailers & six wheelers
(m) Favors and now specifies ability factor "in direct"
(n) If compulsory
(o) No factor favored; can't legislate engineering
(p) Costs reduced as result of

specifying 4% @ 20 factor
(q) Trucks, no; trains, yes
(r) Favors factor enabling vehicle to negotiate maximum grade encountered with reserve margin of 15%
(s) 1 1/2 ton, 6% grade in high; 2 ton & over, 3% in high
(t) Few; 50% will climb 4 1/2 @ 15-18 m.p.h.

LOCATIONS
NE—New England
MA—Middle Atlantic
MW—Mid West
SE—South East
S—South
SW—South West
NW—North West
RM—Rocky Mountain
PC—Pacific Coast
US—United States

Discussion Conducted by **GEORGE T. HOOK, Editor**
COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

TRIGGER TRICKS

Mastery of
in Learning Four

BY STANLEY GERSTIN

THIS is a story for and about G-Men who devote the major part of their time to gun work. However, they are G-Men of another kind—they are paint shop beauticians who handle the spray gun with greatest of ease. And here for the first time is a broadside for and from these peaceful trigger men on trigger tricks with the spray gun that achieve beautiful results.

To the gun-toting hombres of the fleet shop, spray gun equipment is familiar material, so without pretense of teaching old hands new tricks we will polish up and review some of the old, practical tricks practiced in the paint shop and add a buckshot load of new facts regarding the correct use of spray gun equipment with some of the new materials on the market today.

Fundamentally, spray gun operation is simple enough. Spray painting is the atomizing of paint and forcing it on to a truck body or chassis by means of compressed air. The gun itself brings the air and paint together, mixes them in the proper proportions and spreads the paint spray in a uniform film on the surface to be painted. However, it is more simply said than done. The trick is the correct mixture of air and paint and thereon hangs a tale that has made and broken many paint jobs.

Spray gun adjustment is really a delicate operation. Too much air and not enough paint will give too fine a spray and little coverage. Too much paint and not enough air will cause too heavy a film and result in sagging. Again, the shape of the spray, position of the gun, pressure at the gun as well as the capacity of the air compressor itself all have a vital bearing on spray gun work and to understand these elements is the prime requisite in good marksmanship with the spray gun.

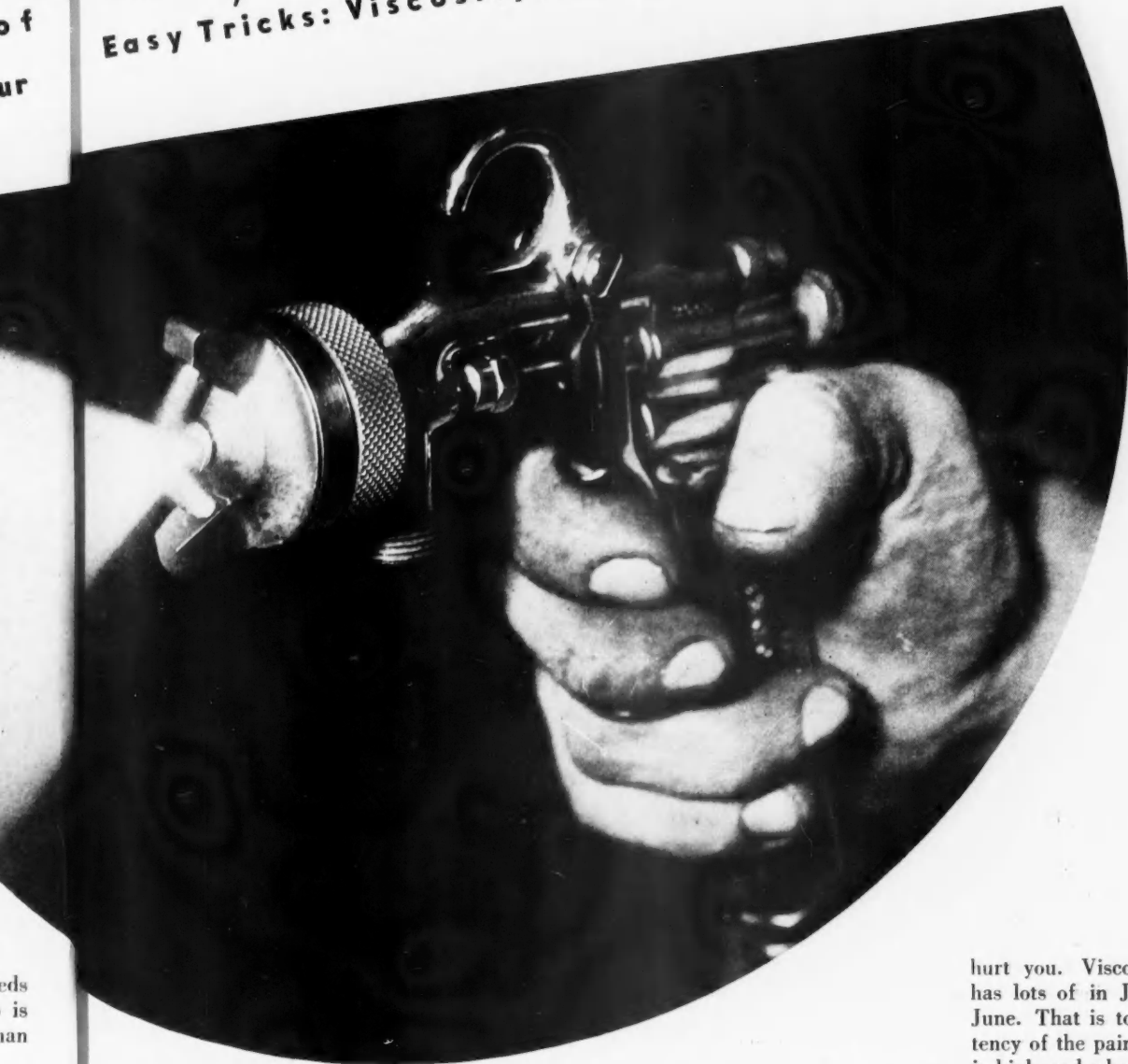
BUT before we start our sleight-of-hand with the spray gun, we must consider the paint itself. Unlike lacquer, synthetic enamel is slower drying and usually requires a higher spraying pressure and greater air volume to break up and properly atomize the tougher synthetics than lacquer. It is necessary to apply first a light coat of synthetic, a little heavier than a mist coat. Then a heavier coat is applied which might again be followed by a light or nearly mist coat. There are good reasons for this operation that will be explained later. This variation in application requires different types of spray heads for the gun than those used for lacquer. Therefore the spray gun of modern vintage is designed for interchangeable air

caps and fluid tips. As synthetic needs more air and less paint, the air cap is larger and the fluid tip is smaller than what is used for lacquer.

Without getting too technical—the use and adjustment of the two major parts of the spray gun do not assure the correct spraying film because the consistency of the paint varies from day to day as well as between products. There are several practices followed by various shops to compensate for this condition. In one shop the trigger man will dip his paddle in the paint, squint as the paint drips off and decide that 20 per



the *Spray Gun* by G-Men of Fleet Paint Shops Rests Easy Tricks: Viscosity, Adjustment, Position of Gun and Pattern



cent of thinner will produce the correct consistency. On another day when the room temperature is down 10 degrees he will decide that 30 per cent of thinner is in order. In the next shop the trigger man will heat paint by setting it on the radiator or in a bucket of hot water to thin it and then take a long guess at the amount of thinner to use to obtain the correct consistency. This

hit or miss method of shooting will not make a marksman of the spray gunner—and brings us to our first important trick:

1. The Viscosity Trick

DON't let the word "viscosity" throw you. Like the good marksman, when you know how to take its "kick" it can't

hurt you. Viscosity is what molasses has lots of in January and less of in June. That is to say, when the consistency of the paint is thick, the viscosity is high and when the paint is thin, the viscosity is low.

To determine accurately just exactly how much thinner to use in your paint for a uniform consistency and to know, therefore, exactly what spray gun adjustments to use to spray that paint of a given consistency is the first lesson the skilled trigger man must know. The routine is easy and once the mystery of
(TURN TO PAGE 68, PLEASE)

ZENITH

OVERHAULING

CARBURETORS — SERIES IN180

CARBURETOR 3 Series 43

Zenith Carburetors, series IN180, are down-draft models incorporating an enclosed mechanical acceleration pump and a vacuum (or mechanical) economizer system.

Before attempting to adjust or overhaul the carburetor, manifold studs and gaskets should be checked. Likewise it is always well to test compression and vacuum.

A special set of carburetor tools, available from the Zenith Carburetor Co., 696 Hart Ave., Detroit, Mich., or its distributors, is suggested. The price complete is about \$15.

The step by step process of disassembling the carburetor follows:

1. Remove cover assembly screws.
2. Raise cover slightly and loosen gasket from bowl assembly.
3. Lift cover and gasket clear of bowl assembly without damaging float.
4. Remove bowl from the barrel.
5. Remove venturi (if removable type), pump assembly and all jets. (If the copper main jet gasket sticks in the bowl, do not remove.)
6. Remove the compensator well block. (Special tool recommended.)
7. Remove lead channel plug and welch plug which is located in underside of bowl. (Use No. 46 drill and special tool.)
8. Remove idle channel tube. See

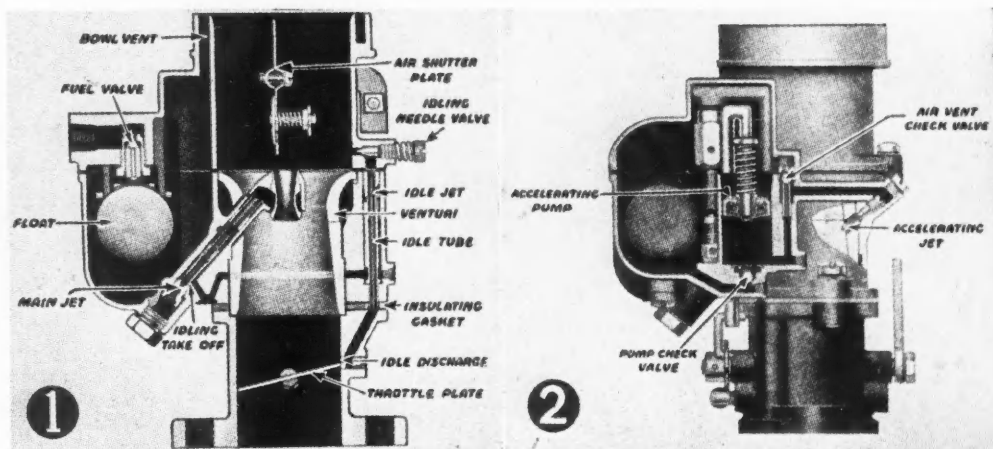


Fig. 1. (Special tool recommended.)

9. Remove pump screen and check ball. (Special tool recommended.)

10. Remove air vent check valve. See Figs. 2 and 3. (Special tool recommended.)

11. Remove air vent ball check or pump check valve needle as the case may be.

12. Do not remove pump refill check valve seat (located beneath air vent check valve), discharge tube (in upper end of main jet channel) or discharge nozzle bushing.

13. Clean all bowl channels using gasoline or other solvent, but do not boil in caustic solution. Blow out all channels with compressed air.

14. Place a 3/16 in. steel ball on the pump check valve seat in the bottom of the pump cylinder and tap lightly in place with a punch and light hammer to recondition seat. Remove ball.

15. Remove float, fuel valve needle, fuel valve seat and vacuum piston

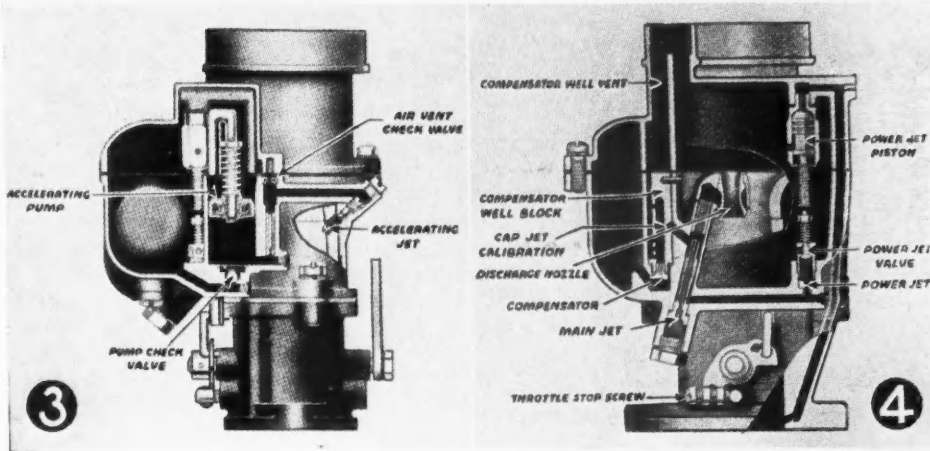
assembly from cover assembly. (Special tool recommended.)

16. Remove throttle plate and shaft from barrel assembly but do not disturb priming hole plug.

17. Examine bowl and cover for bent screw lugs. File lugs if necessary to permit full contact between bowl and cover. There must be no air leak when gasket is in place.

18. Examine cover for correct bowl ventilating channel as shown in Fig. 6. This applies only to covers of style illustrated. If any installation shows a tendency to run erratically, remove upper body casting and increase ventilation by enlarging hole. (Special tool recommended.)

19. A pilot bushing (Zenith No. CR 67-6) is used in the vacuum channel to the power jet vacuum piston to prevent leakage between cover and bowl. If not already installed, use a 5/32 in. drill to a depth of 7/64 in. in both cover and bowl and install bushing as shown in Fig. 5.



Zenith Models and Truck Application List

Zenith IN186 ExI

Biederman 70 (1934-35)
Diamond-T 411B (1934)
Federal 10. 11 (1936)
Gen. Motors T46, T51, T61, T83 (1934-35)
Hug 15A, 15D, 15T, 19A, 19D, 19T, 23A, 23S, 23T (1934-35)
Moreland ED25M, E16H, E22H, E25H (1935-36)
Oshkosh BG3 (1935-36)
Stewart 48HE Exp (1936)
Studebaker IN7 (1935-36)
Ward-LaFrance 400T5 (1935)

Zenith IN186 Ex2

Available W210, W240, W120, W170 (1933-35)
Biederman 20, 30, 40, 50, 60 (1934-35)
Dodge T7 (1934)
Fageol 106, 106BK, 135BK, 250 (1934-35)
Four Wheel Drive HS, T26 (1934-35)

Grass-Premier 425, 435 (1934)
Hahn HB4, HB5, HB6 (1934-35)
Marmon-Herrington A20, A30, 13TH330 (1933-35)
Moreland ED25M, E16H, E22H, E25H (1933-34)
Sterling FB50, FB60, FB70 (1934)

Zenith IN186 EXx2

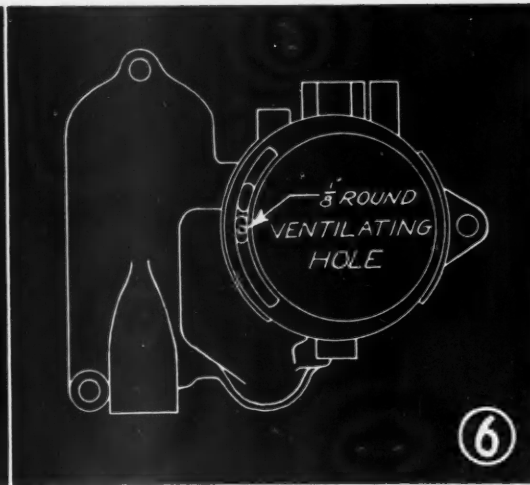
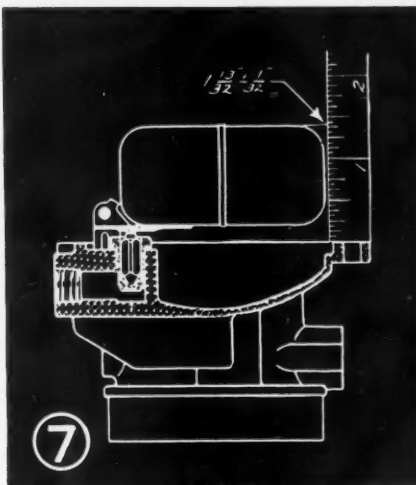
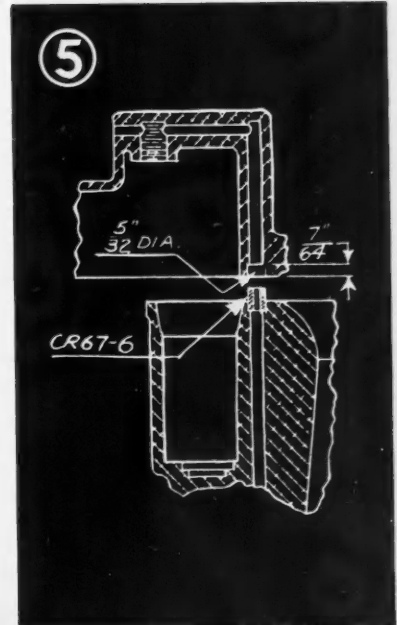
Fageol 250HP, 300HP, 300RA, 326HP (1934-35)
Hug 42A, 42T, 70, 43L, 97L, 97LD, 41S, 43, 87K, 87Q (1934-35)
Indiana 18x6 (1934-35)
Marmon-Herrington 13TH330 (1935)
Studebaker W841 (1935-36)
White 68X, 685 (1933-34 18x6 (1934-35)

Zenith IN186 ExI

Diamond-T 410A, 410B, 425, 525 (1933)

Zenith IN186 EfxI

Diamond-T 412DR, 512B, 512DR (1935)



5. Install air vent check valve. Fig. 2 shows ball type. Retainer should be driven to its seat in the casting. (Special tool recommended.) Fig. 3 shows disc type, installed with valve needle in position, point down, and hammered till flush with face of bowl. (Special tool recommended.)

6. Replace accelerating jet and channel screw.

7. Install idle jet snugly, seating it against end of idle channel tube.

8. Place power jet in position with head up, followed by copper gasket and power jet valve which must be screwed snugly but not hard enough to squeeze soft copper gasket out of shape. See Fig. 4. (Special tool recommended.)

9. Replace main jet using a new gasket only if old one was removed from bowl.

(TURN TO PAGE 56, PLEASE)

20. Check for correct setting. (Recommended settings can be obtained from carburetor or vehicle manufacturer.)

THE following steps cover reassembly of the carburetor:

1. Install lead channel plugs. (Special tool recommended.)

2. Install welch plug in under side

of bowl using 1/4 in. flat end punch and a light hammer.

3. Install idle channel tube. (Special tool recommended.)

4. Place aluminum check ball in position in bottom of pump cylinder and install pump screen. Wider frame surface is on the bottom. (Special tool recommended.)

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Fig. 6.
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JOURNAL
ER, 1937

MOST of the truck operators now operating under claimed grandfather rights under the Federal Motor Carrier Act feel that the policy of the Interstate Commerce Commission has become so well settled that the eventual issuance of their certificates is a mere matter of routine. Many profess to believe that at long last the Commission will broadcast certificates on all pending applications wherein no vigorous opposition has developed.

The present procedure and the decisions now issuing almost daily from Commission offices indicate that there are still hundreds of important questions which must still be decided, many of which may alter the routine issuance of certificates. Recent decisions furnish small support for the theory that there will be any precipitous Commission action. The Commission has never been in the habit of allowing a decision to be released which is not based upon the fullest possible investigation. With the Bureau of Motor Carriers composed of individual men, particularly with respect to key positions, with broad back-



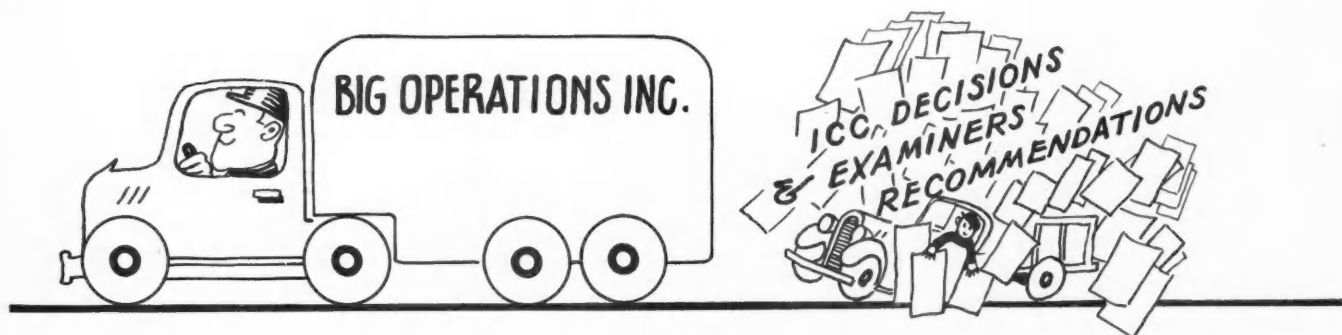
By *Hall Johnston*

The author was for several years an ICC Senior Attorney-Examiner and is now engaged in private practice, specializing in motor carrier cases, with offices in the Transportation Building, Washington, D. C.

grounds of experience either in the Commission itself, in the State Commissions, or in actual motor carrier operation, there is little likelihood of any action on these applications en masse. The first two classes of Commission employees will reflect the caution exercised generally by regulatory bodies and will instinctively avoid having anything to do with hastily prepared or ill-considered decisions. Groups coming into the Government service from private industry will fall into step with the policies of the Bureau in which they are absorbed.

Carriers who have already had their rights determined under the grandfather clause are fortunate in that they will escape the effect of trends now developing in the Commission which doubtless will affect its future decisions. One of these trends is a tendency which appears to favor the larger operators and which, if carried to its ultimate conclusion, might go far toward eliminating the operator who owns only a few units. Underlying this trend is undoubtedly

(TURN TO PAGE 74, PLEASE)



WILL REGULATION SMOTHER SMALL OPERATORS?

A Frank Inquiry Into A Vital Question Raised by ICC Decisions And Examiners' Recommendations in Grandfather Clause Applications Tending To Favor Big Operations

COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

RACING CARS AND TRUCKS ARE

BROTHERS

UNDER THE HOOD



Floyd O'Neal
who has been barrelling racing cars

around the tracks of the country for

14 years, tells how his experience

helps him as chief mechanic of a

Knoxville fleet

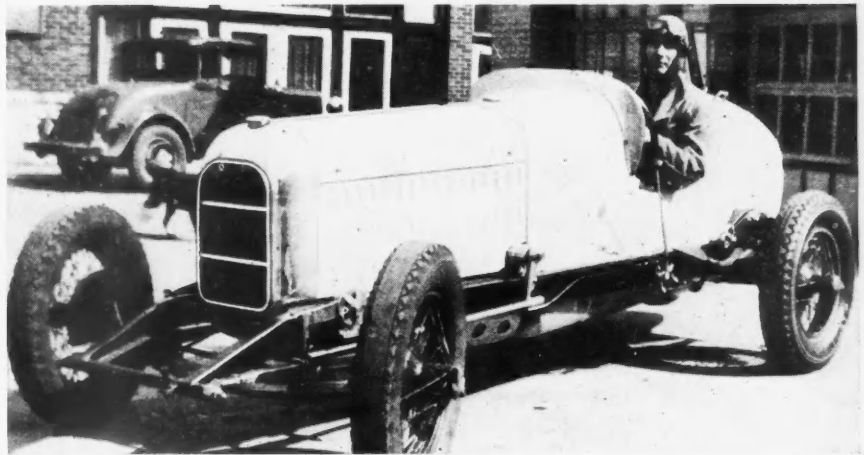
By AL MANOLA

OFFHAND there doesn't seem to be much kinship between sleek, swift racing cars and huge, lumbering trucks. Racing drivers want speed. Fleet operators want economy. But Floyd O'Neal, chief mechanic for Huber and Huber, Inc., in Knoxville, Tenn., finds that racing cars and trucks are really brothers under the hood. And he should know.

For the past 14 years, off and on, O'Neal has been a race driver, building and driving his own cars. During most of that time he's been a mechanic for trucking firms throughout the midwest. He can't get away from engines.

"I like to see them turn over fast," grins O'Neal. "The sound of a powerful engine spinning out those r.p.m.'s is music to my ears."

O'Neal has driven on nearly every dirt track in the central United States.



Floyd O'Neal at work on a Huber & Huber truck and at the wheel of his Hispano

He has barreled his cars through the dust of Ohio, Illinois, Indiana, and Nebraska. At Ord, Nebr., in 1929, he rolled into the grandstand, cracking up his car and himself. It was his most serious accident. He has raced in the

State Fair competition at Springfield, Ill., and in 1935 he entered the 500-mile speed classic at Indianapolis, but of all things ran out of gas in his trials and failed to qualify.

(TURN TO PAGE 54, PLEASE)

SHOP HINTS

FROM FLEET SHOPS



By G. E. UPPERMAN

Continental Baking Co.
Wheeling, W. Va.

1. Self-Draining Paint Can

INSTEAD of losing all of the paint that flows over the edges of the can we punch holes with an ice pick about $1\frac{1}{2}$ in. apart all around the crimp in the top of the can and the paint instead of flowing over drains back into the can.

4. One-Hand Grease Gun

FOR those hard to get at fittings that can be operated on with only one hand we have a special shop made grease gun. To make it, we took a regular hand gun and straightened out the handle. While the handle which is really part of the plunger was straight we slipped a felt washer over it. This was followed by a spring strong enough to make the plunger return to the cocked position after the gun was used. On the other end of the spring we placed a nut and then re-bent the handle to its usual position. Now the gun can be operated with one hand.

By WILLIAM STAIB
Purity Bakeries, Newark, N. J.

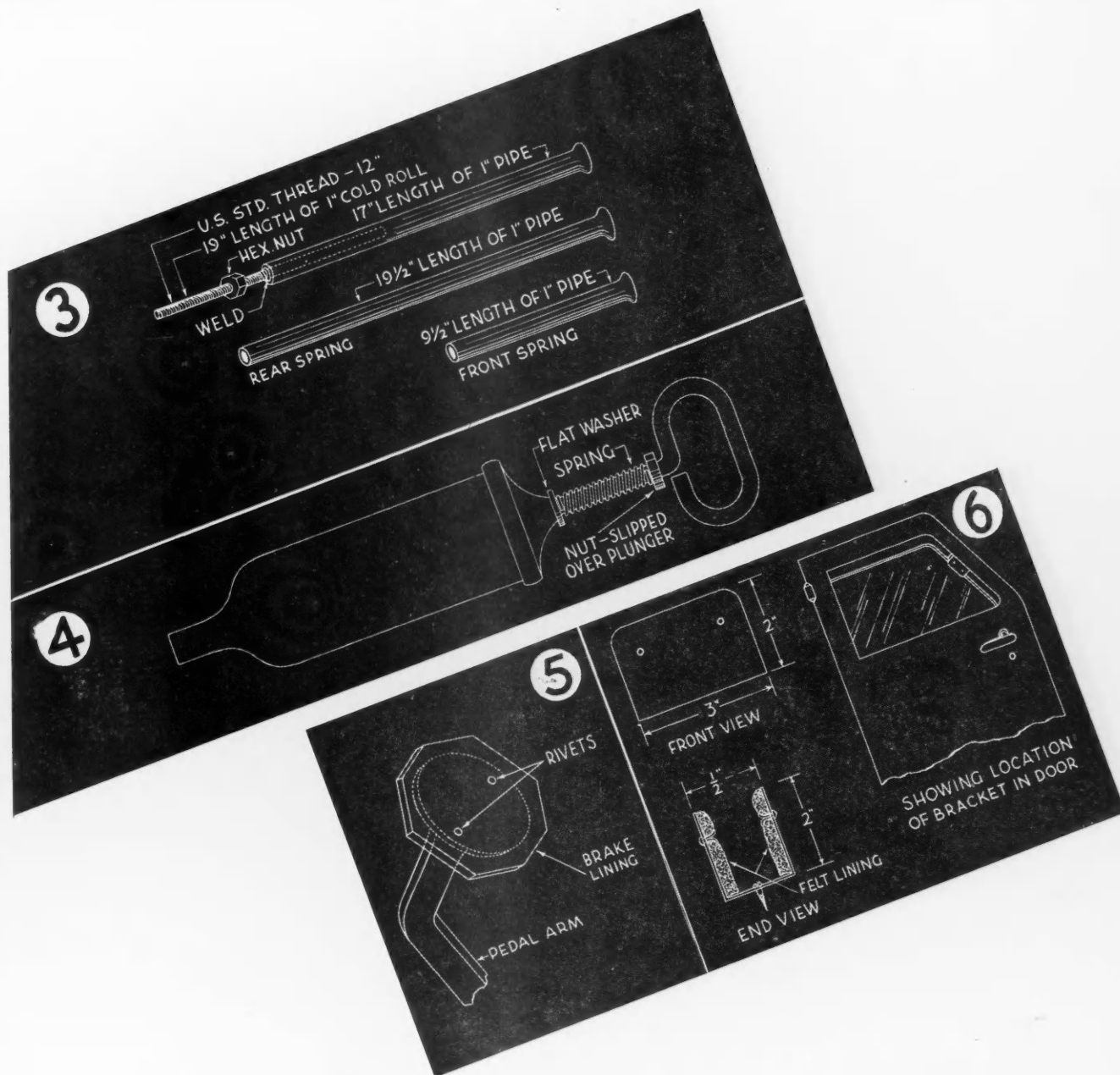
2. Hub Nut Wrench

WHEN adjusting hub bearing nuts on the Ford V8 full floating rear axle we found that the Ford hub bearing wrench interferes with the hub studs which is due to the shortness of the wrench. We improved upon this wrench by brass welding two wrenches together placing the large size opening of one against the small size opening of the other. The result is a wrench long enough to avoid striking the hub studs and also more handy to remove the front axle hub cap with the small opening of the wrench.

5. Brake Pedal Pad

OUR Ford V8 delivery trucks make an average of 100 stops per day, and

COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937



the alr constant use of the clutch and b pedals wears out the pedal pad in very short time. After removing the worn out pedal pad, we relined the metal base of the old pad with remnants of brake lining, size 3 x 5/16 in. The pieces are cut 3 in. long and after riveting them to the disk, the corners are cut giving the pad an octagonal shape. The salesmen are enthusiastic since it gives them a sure grip on the pedals in slippery weather. We find that it prolongs the life of the pedal pads indefinitely and represents a substantial saving.

6. Door Glass Guide

THE number of broken door glasses every rainy season has been cut down materially with the following device. We install a guide bracket for the door

glass in the cut out section of the door that the glass covers when in the up or closed position. A section of the front glass channel, the width of the guide is cut out and the guide is fastened to the door frame with two countersunk wood screws in exact line with the remaining glass channel. The inside of the U shaped guide is made 5/16 in. wider than the glass itself. The inside of the guide is then covered with a piece of felt 1/8 in. thick leaving 1/16 in. play for the glass in case of sudden twists or jolts of the door. The felt covers the whole of the sides of the guide. It is glued with weatherproof cement and riveted with two split rivets for each piece of felt for added security. The guide will hold the glass in a firm position especially when the window is only one-half or three-quarters closed or when the door is slammed.

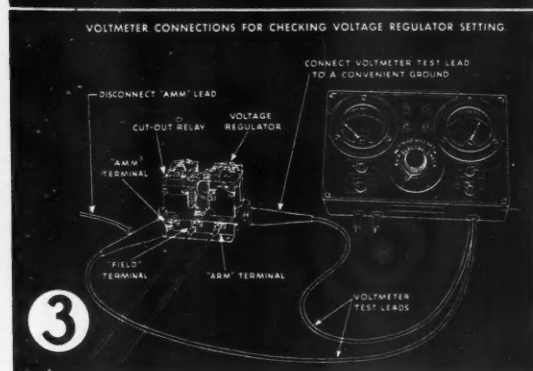
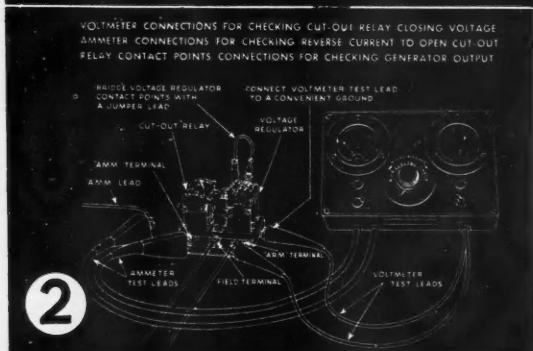
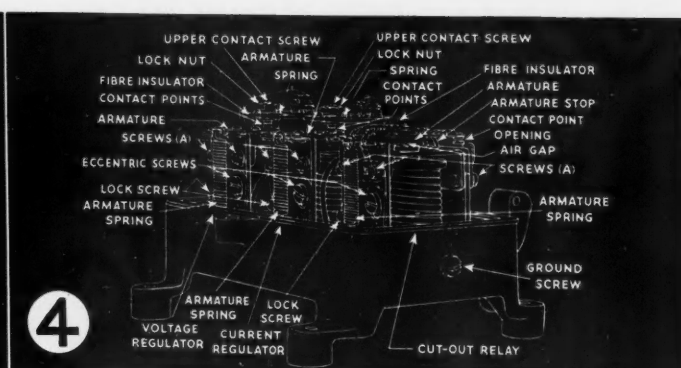
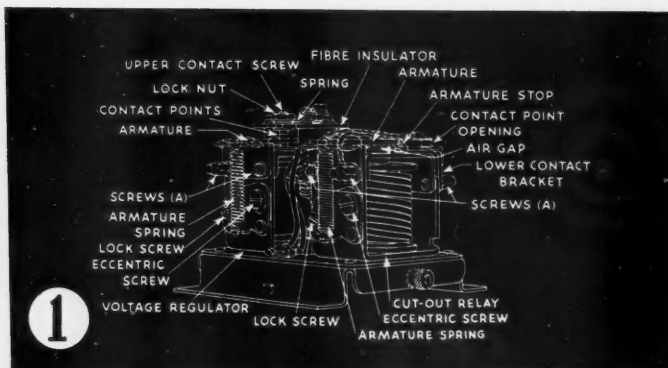
By **PRESTON R. COLEMAN**

Rainey Wood Coke Co.
Norristown, Pa.

3. Spring Spreader

WE made a spreading tool for Ford Springs that has saved us a great deal of time on all spring and shackle jobs. The tool consists of a 17 in. length of 1 in. pipe flattened to a sharp edge at one end. Inserted in the other end of this pipe to a depth of 7 in. is a piece of 1 in. cold rolled steel. This steel is welded in this position and the 12 in. of steel exposed is threaded and a 1 in. standard nut is put on the threads for adjustment. The free end of the cold rolled steel fits into a piece of 1 in. pipe with a flattened end same as the piece that is welded to the steel. The

(TURN TO PAGE 106, PLEASE)



How TO TEST AND ADJUST DELCO-REMY

ELECTRICAL Series 4

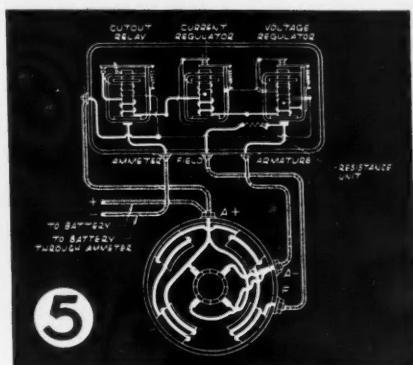
The Delco-Remy voltage regulator, designed to be set on open circuit, is illustrated in Fig. 1. It consists of a vibrating voltage regulator unit and a cut-out relay, mounted for convenience on the same base and enclosed by the same cover. (Cover not shown.) This type of regulator is used with third brush generators, the third brush effect being the current limiting device.

PROCEDURE FOR CHECKING AND ADJUSTING THE OPEN CIRCUIT TYPE VIBRATING VOLTAGE REGULATOR—CUT-OUT RELAY TESTS

CLOSING VOLTAGE OF CONTACT POINTS—The relay must be checked at operating temperature. All tests and adjustments should be made at the end of a run before the relay has cooled off or the engine may be run at about 1500 r.p.m. until the relay reaches operating temperature. Connect an accurate reading voltmeter as illustrated in Fig. 2. Bridge the voltage regulator contact points with a jumper lead as shown while making this check. Gradually increase the engine speed and note the voltage at which relay contact points close. Decrease engine speed and note reverse current necessary to open points. Remove the jumper lead after completing adjustments to the cut-out relay. (See adjustments for setting the closing voltage.)

GENERATOR OUTPUT—Connect the ammeter and voltmeter and bridge the voltage regulator contact points as illustrated in Fig. 2. Start the engine and increase the speed to the point where the maximum output of the generator is obtained. This output must be taken at the specified voltage, since it is characteristic of a third brush generator to increase its output with increased voltage. To

VOLTAGE & CURRENT REGULATORS (OPEN)



secure the specified voltage, it may be necessary to insert a variable resistance in the charging circuit and cut in resistance until the correct voltage reading is obtained. Note the output of the generator and adjust by shifting the third brush. Moving the third brush in the direction of armature rotation will increase the output. Moving third brush in the direction opposite to the armature rotation decreases output.

CUT-OUT RELAY ADJUSTMENTS

(Refer to Fig. 1 and Test Specification Bulletins)

AIR GAP—Set Air Gap between Armature and core with contact points held in a closed position. The Lower Contact Bracket has slotted holes for making air gap adjustments. Loosen Screws (A) on both sides of relay and move Bracket up or down as required to obtain the correct Air Gap.

CONTACT POINT OPENING—Set Contact Point Opening by bending the

Current and Voltage Regulator Test Specifications (Open Circuit Type)

Delco-Remy Model	Current Regulator Unit		Voltage Regulator Unit	CUT-OUT RELAY			
	Point* Opening (In.)	Current Setting (Amps.)	Voltage Setting (Open Circuit)	Air Gap (In.)	Point Opening (In.)	Points Close (Volts)	Points Open (Amps. Reverse Current)
5530, 5564	.015	50	14.75-15.0	.057	.020	13-14	0-3.0
5526, 5574 5578	.015	40	14.75-15.0	.057	.020	13-14	0-3.0
5525	.015	40	14.75-15.0	.057	.020	13-14	0-3.0
5529	.015	18	14.75-15.0	.057	.020	13-14	0-3.0
5561, SM1428, SM1527	.015	14	29.5-30.0	.057	.020	26-27	0-3.0
5565, SM1553	.015	25	29.5-30.0	.057	.020	26-27	0-3.0
SM1559	.015	14	36.5-37.0	.057	.020	34-35	0-3.0
5562	.015	10	29.5-30.0	.057	.020	26-27	0-3.0
5567	.015	40	8.3-8.5	.057	.020	6.5-7.0	0-3.0
5531*	.015	80	14.75-15.0	.050	.020	13-14	0-3.0
5568, 5580*	.015	100	14.75-15.0	.050	.020	13-14	0-3.0
5569	.015	30	14.75-15.0	.057	.020	13-14	0-3.0
5571	.015	57	14.75-15.0	.057	.020	13-14	0-3.0
5575	.015	33	14.75-15.0	.057	.020	13-14	0-3.0
SM1864	.015	10	36.5-37.0	.057	.020	34-35	0-3.0
SM1875	.015	40	36.5-37.0	.057	.020	34-35	0-3.0
5576	.015	33	14.75-15.0	.057	.020	13-14	0-3.0
5577	.015	50	8.5-9.0	.057	.020	6.5-7.0	0-3.0
5566	.015	50	14.75-15.0	.057	.020	13.0-14.0	0-3.0
5579	.015	55	14.75-15.0	.057	.020	13.0-14.0	0-3.0
5572	.015	25	39.5-40.0	.057	.020	34.0-35.0	0-3.0

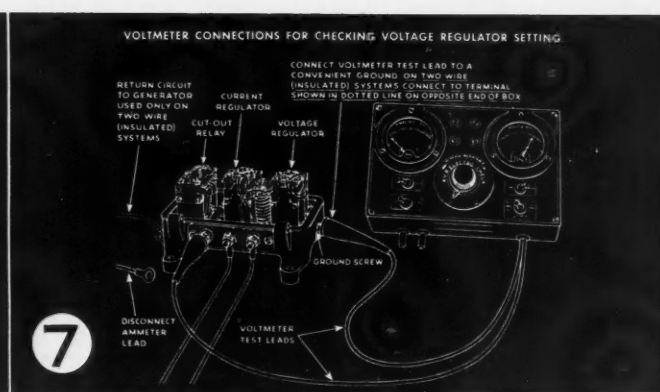
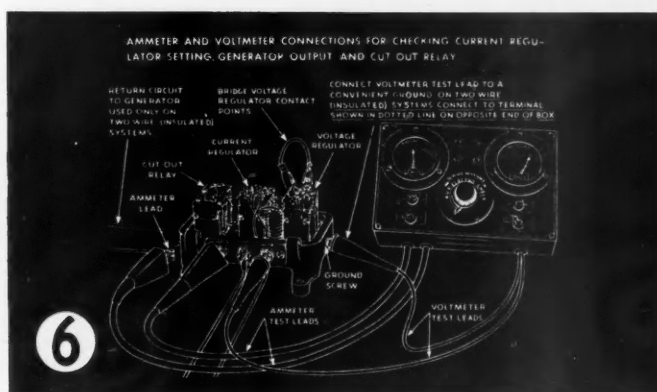
*Voltage regulator point opening .005-.008. Field relay air gap .010. Field relay open circuit voltage 7.5-8.0. Air gap .020.

Voltage Regulator Test Specifications (1933-1937)

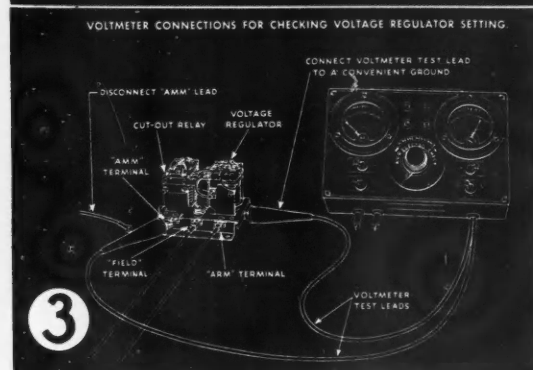
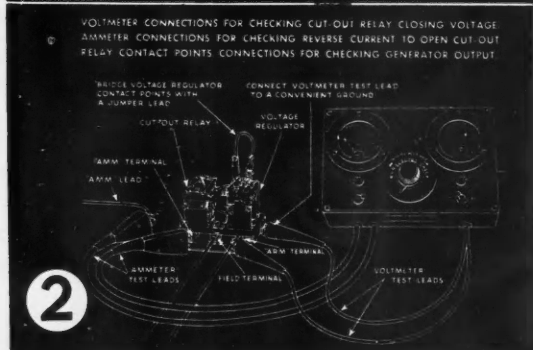
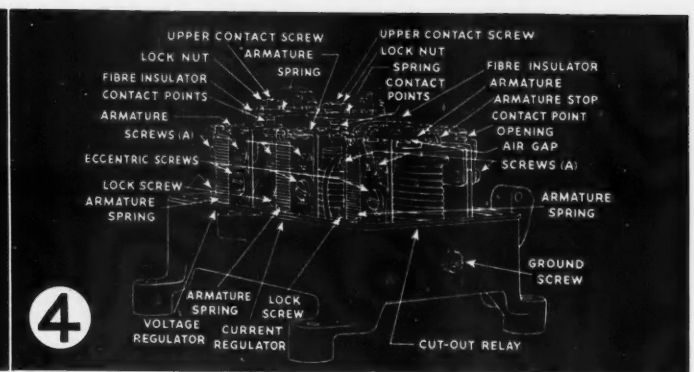
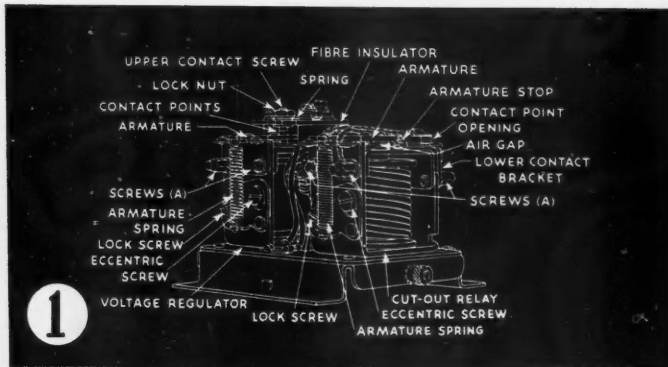
MODEL	Voltage Regulator Unit		CUT-OUT RELAY			
	Point Opening (In.)	Voltage Setting (Open Circuit)	Air Gap (In.)	Point Opening (In.)	Points Close (Volts)	Points Open (Amps. Reverse Current)
5524, 5535, 5536, 5563, 5573, SM1804	.015	14.75-15.00	.057	.020	13-14	0-3.0
5528	.015	7.5-8.0	.057	.020	6.5-7.0	0-3.0
5533	.015	8.3-8.5	.057	.020	6.5-7.0	0-3.0
5538, 5570	.015	8.3-8.5	.057	.020	6.5-7.0	0-3.0

Armature Stop. If contact points are pitted or burned, clean with a thin, clean, fine-cut contact file before adjusting the point opening. Caution: Never attempt to file the contact points or never close the contacts manually while the

battery is connected. The resistance through the generator and relay is very low and completing the circuit to the battery when the generator is not operating may allow enough current to flow (TURN TO PAGE 58, PLEASE)



CIRCUIT TYPES)



How TO TEST
AND ADJUST
DELCO-REMY

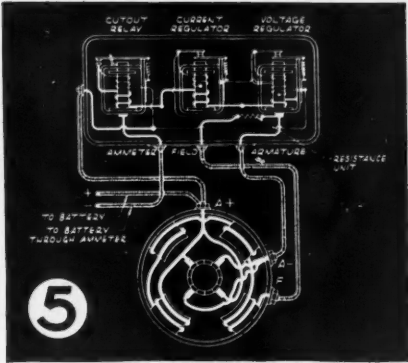
VOLTAGE & CURRENT REGULATORS (OPEN

The Delco-Remy voltage regulator, designed to be set on open circuit, is illustrated in Fig. 1. It consists of a vibrating voltage regulator unit and a cut-out relay, mounted for convenience on the same base and enclosed by the same cover. (Cover not shown.) This type of regulator is used with third brush generators, the third brush effect being the current limiting device.

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(Refer to Fig. 1 and Test Specification Bulletins)

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Delco-Remy Model	Current Regulator Unit		Voltage Regulator Unit	CUT-OUT RELAY			
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5525	.015	40	14.75-15.0	.057	.020	13-14	0-3.0
5529	.015	18	14.75-15.0	.057	.020	13-14	0-3.0
5561, SM1428, SM1527	.015	14	29.5-30.0	.057	.020	26-27	0-3.0
5565, SM1553	.015	25	29.5-30.0	.057	.020	26-27	0-3.0
SM1559	.015	14	36.5-37.0	.057	.020	34-35	0-3.0
5562	.015	10	29.5-30.0	.057	.020	26-27	0-3.0
5567	.015	40	8.3-8.5	.057	.020	6.5-7.0	0-3.0
5531*	.015	80	14.75-15.0	.050	.020	13-14	0-3.0
5568, 5580*	.015	100	14.75-15.0	.050	.020	13-14	0-3.0
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5571	.015	57	14.75-15.0	.057	.020	13-14	0-3.0
5575	.015	33	14.75-15.0	.057	.020	13-14	0-3.0
SM1864	.015	10	36.5-37.0	.057	.020	34-35	0-3.0
SM1875	.015	40	36.5-37.0	.057	.020	34-35	0-3.0
5576	.015	33	14.75-15.0	.057	.020	13-14	0-3.0
5577	.015	50	8.5-9.0	.057	.020	6.5-7.0	0-3.0
5568	.015	50	14.75-15.0	.057	.020	13.0-14.0	0-3.0
5579	.015	55	14.75-15.0	.057	.020	13.0-14.0	0-3.0
5572	.015	25	39.5-40.0	.057	.020	34.0-35.0	0-3.0

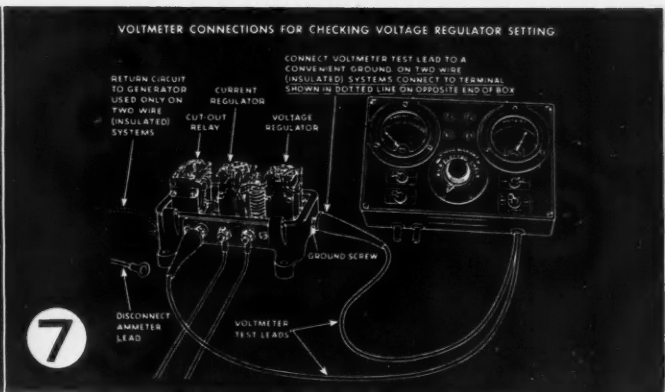
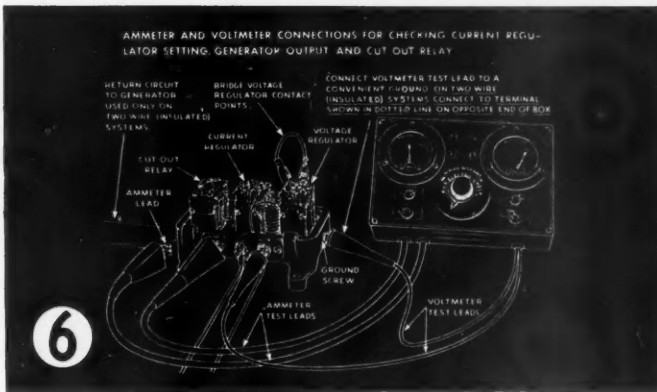
*Voltage regulator point opening .005-.008. Field relay air gap .010. Field relay open circuit voltage 7.5-8.0. Air gap .020.

Voltage Regulator Test Specifications (1933-1937)

MODEL	Voltage Regulator Unit		CUT-OUT RELAY			
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5533	.015	8.3-8.5	.057	.020	6.5-7.0	0-3.0
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battery is connected. The resistance through the generator and relay is very low and completing the circuit to the battery when the generator is not operating may allow enough current to flow (TURN TO PAGE 58, PLEASE)



CIRCUIT TYPES)

AFTER HOURS

editorial comment

By **GEORGE T. HOOK, Editor**

Are Small Operations Doomed?

ON another page Mr. Johnston, a former I.C.C. attorney-examiner, speculates realistically on the trend of regulation as it is being administered under the Federal Motor Carrier Act. It is Mr. Johnston's fear, which he supports with evidence, that there is a pronounced "tendency which appears to favor the larger operators and which, if carried to its ultimate conclusion, might go far toward eliminating the operator who owns only a few units."

Underlying this trend, he reasons, is the desire to furnish the country with a dependable transportation system and the necessity for whipping motor carrier units into larger groups so that they may be more economically and efficiently supervised.

The fear which Mr. Johnston expresses as the result of his analysis of regulation is the very one which opponents of regulation expressed when it was being proposed. The criticism levelled at those opponents was that they were looking at the matter solely from a selfish viewpoint. It develops, seemingly, that selfish or not, the objection was a valid one.

Drastic Revision Is Possible

Far from being merely a fear we have heard the same thought expressed as a prediction by Commissioner Beamish, of the Pennsylvania Public Utility Commission. Mr. Beamish addressed a recent convention of the Pennsylvania Motor Truck Association. He left no doubt that he wanted himself considered a friend of the trucker and of highway transportation. He boasted at some length that at last the Public Utility Commission of Pennsylvania was free of railroad domination.

Almost in the same breath he predicted that in a very few years only 10 per cent of the carriers on the roads today would be doing business as the result of regulation. We thought he said 5 years; it may have been 10. It is to be assumed that the larger operators would survive and the smaller perish.

We feel certain that so drastic an effect of regulation was never contemplated by even its most rabid supporters. Some weeding out was to be expected—but certainly not virtual extermination. In the circumstance a natural impulse is to inquire into the attitude of the American Trucking Associations, Inc., the national organization of truck operators. It is conceded that neither the analysis of one attorney nor the prediction of one regulatory official is conclusive proof that the elimination of small operators is imminent. However, taken together they do seem to indicate the advisability of an independent study by the A.T.A., preparatory to a declaration of policy.

The small operator has not the means to defend himself. The question now is: Does he have a champion?

Thoughts on Thumbing

IT was nice publicity the trucking industry got in the newspapers recently. The independent son of a well-known book publisher left home with very little in his purse to see the country. Papa became worried by his silence and gave newspapers notice of the parental anxiety. The son was located and back home he paid glowing tribute to the courtesy of truck drivers who gave him lifts.

It was nice, we say, to get the publicity in newspapers which seldom have anything good to say about trucks and too often misrepresent matters with

"Truck-Kills-Tiny-Tot" headlines. However, it is not nice to know that in spite of all that has been said against the pernicious practice of taking on riders by employers and safety experts, and in the face of insurance company prohibition and I.C.C. regulations, drivers continue to do as they please.

We doubt, of course, that truck drivers take on hitch-hikers out of a sense of courtesy. Driving over the same long route day after day does become pretty monotonous—the hitch-hiker is welcome company and pleasant diversion. Unless the monotony can be overcome there is probably nothing short of efficient patrolling that can keep truck drivers from going soft at the sight of a thumb. Has anybody tried a radio with success?

Commissioner Rogers

AT the moment of writing the Senate has acted upon the President's nomination to the Interstate Commerce Commission of John L. Rogers, director of the Bureau of Motor Carriers. The Senate confirmed the President's wise choice.

As chief of the Bureau of Motor Carriers Mr. Rogers won the respect of the truck industry. On the score of experience alone he merited the promotion. Add to that his tireless devotion to duty and highly developed sense of fairness and you have an ideal choice for the Commission. Long may he serve.

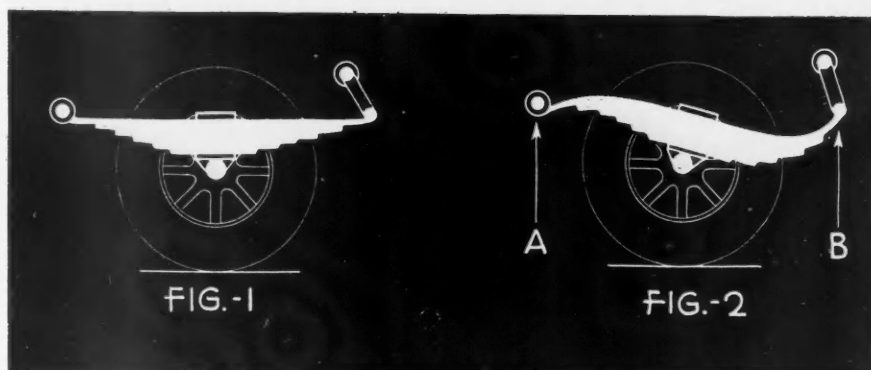


Ability Factor Suspicions

AMONG some fleet operators there has grown the suspicion that so-called heavy-duty truck manufacturers are responsible for all this recent talk about ability factors for trucks on hills. The suspicion, of which we have been made aware by correspondence, seems to spring from the reasoning that because heavy-duty trucks are more powerful they have everything to gain from the imposition of an ability factor.

This reasoning seems entirely to overlook the fact that the tendency to overload utterly disregards truck makes and rated capacities. On 2, 3, 4 and

(TURN TO PAGE 82, PLEASE)



SPRINGS

Lead a Hard Life

HERE IS WHAT HAPPENS TO THEM

CHASSIS springs take a severe licking even with their rated load. The next time you are tempted to put on another 1000 lb. of payload, think about the springs. An explanation of what happens follows:

1. The truck is standing still with a normal rated load on it. So far so good. Fig. 1.

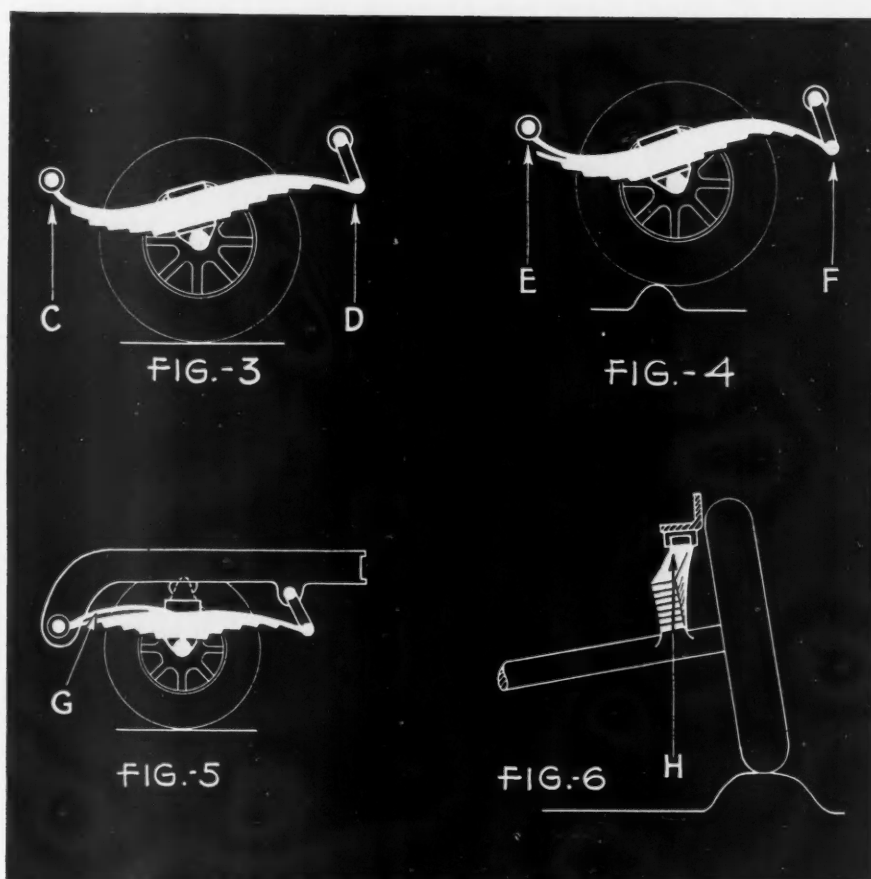
2. The clutch is engaged to start forward and "A" gets twice its normal load and the load at "B" goes to zero. Fig. 2. The same thing happens when brakes are applied when backing up.

3. When the clutch is engaged to back up the reverse of Fig. 2 is true. There is zero load at "C" and twice normal load at "D." Fig. 3. This same condition holds when the brakes are applied going forward.

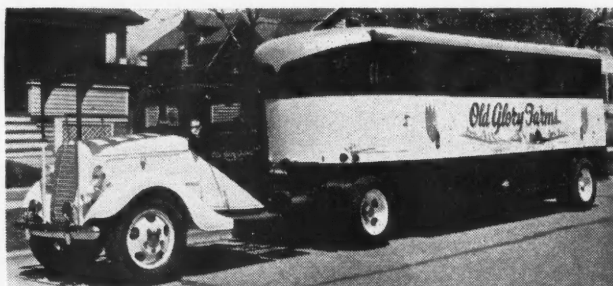
4. When the wheel hits a bump going forward and the brakes are applied, there is $\frac{1}{2}$ normal load in an upward direction at "E" and $2\frac{1}{2}$ times normal load at "F." Fig. 4.

5. When the frame hits the rubber bumper on the axle the main plate buckles at "G." Fig. 5.

6. When the wheel hits a bump or rides a curb the axle slants and the rest of the chassis tends to stay level. See the twist. Fig. 6.



1. IT takes an 85-h.p. FORD to tote the 7-h.p. (hay-burner) load of Old Glory Farms, Oshkosh, Wis., from town-to-town on the trotting circuit. But once inside their special HIGHWAY trailer, padded, insulated, ventilated and screened, the champs ride in what is known as Pullman comfort.



2. DOWN under this streamline furniture van, so smooth it doesn't even sport a door handle, is a standard model 805 WHITE cab-over-engine chassis. C. B. Howard Co. recently appeared with it on the streets of Indianapolis. The body looks like a White-Count de Sakhnoffsky collaboration.

1



2

3. IT appears that Cadillac, Mich., must march on the well-known stomach when one wholesale grocer bedecks himself with an outfit as big as this one. It's a GMC Model F46 tractor and a GMC TT-218W tandem-axle semi-trailer.

The ALBUM

OF TRUCK TRANSPORTATION EQUIPMENT

4. KEEPING 550 gallons of ice cream at 5 deg. "below" is a snap for the three new trucks of Meier Ice Cream Co., Milwaukee. And no wonder! The DRY-ZERO Sealpad insulation in the roof is 8 in. deep, 6 in. in the sides. Not only that, but each has three Kold-Hold refrigerating units, refilled nightly at the company's ammonia plant. H. BARKOW CO., Milwaukee, built the bodies, while a STUDEBAKER 1½-ton cab-over-engine job supplies the power.



3

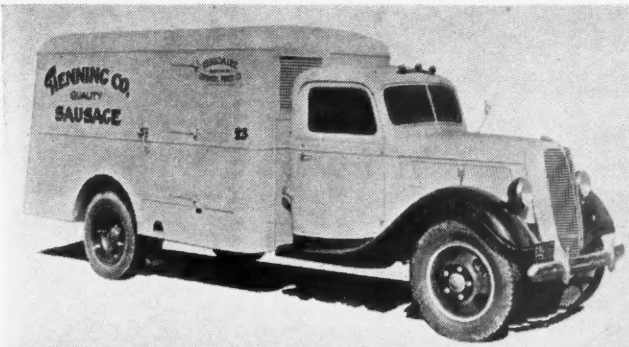
5. SHADES of Dunderbeck and his infernal sausage meat machine may be seen on the streets of Saginaw, Mich., when L. A. Henning Co.'s refrigerated FORD truck makes its rounds. The body was built by SCHULTZ BROS. of Saginaw and is cooled by a mechanical FRIGIDAIRE unit. DRY-ZERO in roof and sides and a cork floor keep inside temperatures between 35 and 40 deg.

6. MIXING-on-the-run is easy for this 1½-ton CHEVROLET complete with a separate-engine-drive Jaeger concrete mixer. When the job stops at a traffic light, there's no delay in mixing and it its destination 1½ yds. of concrete are ready to go to work. The installation was by JAEGER MACHINE CO.

7. PLEASING to New York City's more temperate thirsts is this new MACK which whisks about light drinks in the making—faster and more of them because of its light, polished aluminum body. The five "swinging doors" on each side seem a bit incongruous, but the practicality is there even if the "spirits" are not. Consolidated Syrup Corp. is the owner.

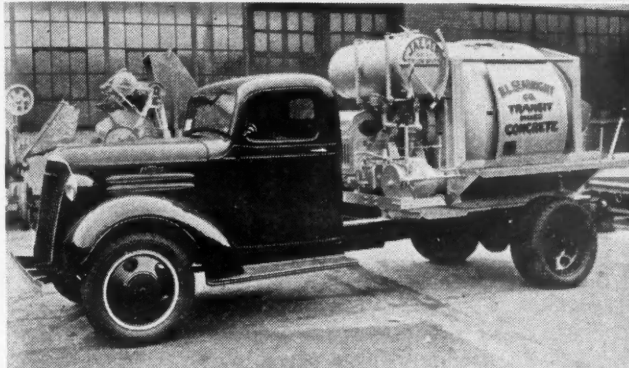


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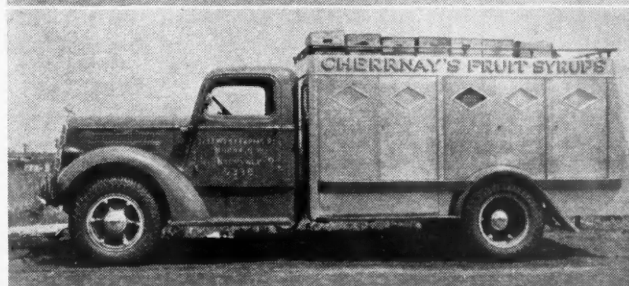


8. JUST another truck of coffee might be said of some jobs we've seen, but not this one. Take for instance its deep coffee and cream colors, the chromium lettering that stands out from the body and the full-size chromium wheel disks. Of course that DIAMOND-T chassis helps, as they say, to gild the lily.

5



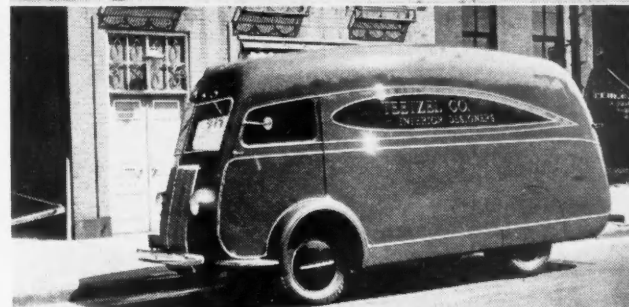
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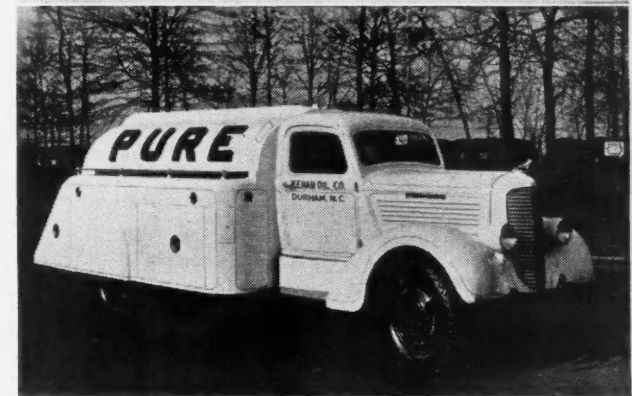
9



10

9. WHEN Teetzel Co., Detroit, decided a smart-looking truck would be a good advertisement, it didn't fool. The chassis is a standard INTERNATIONAL cab-over-engine model D-300. But the rest was on their own. In addition to the streamlined contours, note the four marker lights in pairs, the special wheel disks, the sign panel in contrasting grey, the rear ornamental lights. Not shown is the two-section rear door hinged at top and bottom. The lower half drops back to form a tail board.

11



12

10. A winter's fuel supply for a good-sized house all in one fell swoop from this giant AUTOCAR! The 228-in. aluminum body is fitted with a stainless steel floor and holds no less than 902 cu.ft. Third axle unit is a TRUCKTOR Model "HR" and the hoist is a Gar Wood TV-7X long stroke.

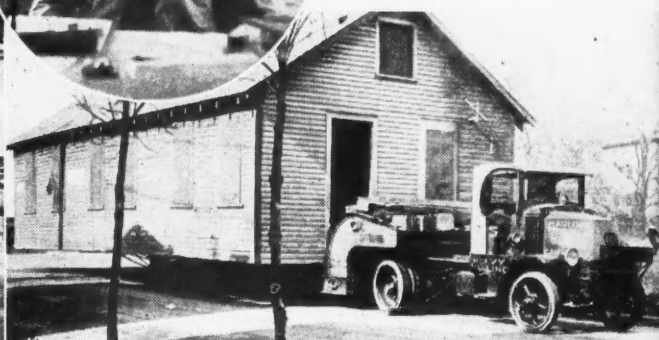
11. OUT Milwaukee way some of the townsmen make pennies on the side brewing beer. But instead of push-carts to haul their wares, they buy outfits like this AVAILABLE job that hauls 783 cu. ft. of grain at a time. The high-carbon-steel body is by MULLINS BODY & TRUCK CO., also of Milwaukee and is mounted on a LAPEER trailer. Color scheme is cream and dark blue.

12. PURE white except in make (It's a DODGE), Kenan Oil Co. of Durham, N. C., figured rightly that this gleaming tanker typified the company's product. 5600 lb. of fuel and oil ride in style inside those streamlined contours.

GET A LOAD OF REAL LOADS

Trucking Is The Great Adventure To Firms Like Gerosa Who Find That Moving a 70 - Foot Rug, A Balky Elephant or a 326,000 - Lb. Crown Shield Are All In The Day's Romantic Work

By *Irving Sherman*



Lawrence Gerosa, insert, takes special pleasure in handling unusual jobs. Beginning at the top of the page, a few are illustrated such as his 110-ft. beam dropping a massive statue in place atop a 50-ft. column in Pelham Bay Park. Heaviest of all recorded loads were the 326,000-lb. crown shields used in subway tunneling. Wiley Post's Lockheed plane was too wide for any of the east river bridges, but Gerosa picked it up from a special lighter. Even houses, with steam pipes intact are not too much for this versatile firm.

CHANG, the female elephant, a little less than three tons, raised her ponderous trunk and trumpeted. Then she charged. Net result: Forty men flying in all directions and a perfectly good truck ruined.

"Try it again," counselled the keeper. It was the Central Park Zoo in New York and Chang had been scheduled for removal—a distance of but a few

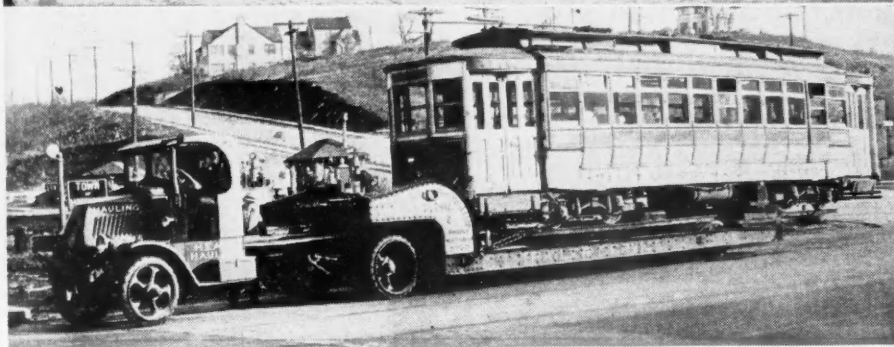
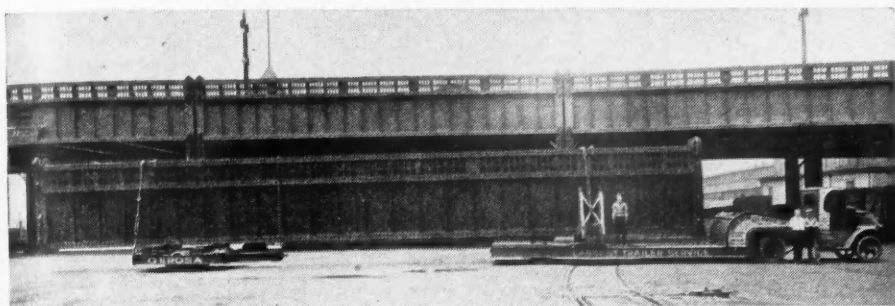
miles away to the Prospect Park Zoo in Brooklyn.

Another truck was backed up to Chang's quarters. The forty men re-assembled.

"Let 'er go, boys!"

This time there was no hesitation. Chang did not deliberate. Up went her trunk. Her tremendous paws worked like gigantic triphammers. The second

COMMERCIAL CAR JOURNAL
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Again reading down the page finds, first, a 97-ft. bridge section, complete with rail about to be hoisted to New York City's elevated highway. When an embalmed captive whale was to be taken to Coney Island, railroad curves were too sharp for the 72-ft. car, so Gerosa hauled car and all on two trailers. Eight tons of engines in a fragile hull was the chief factor when Miss America X was sent to Atlantic City. The rescue of White Plains' stranded trolleys was another all-in-the-day's-work job.

and here's how they went about the task.

A Gerosa truck was fitted to resemble a tent. Raised above side racks, twelve and one-half feet high, was an arched canvas cover and on the floor of the truck was a thick layer of straw. A heavy harness was fixed around the rear of the elephant. This harness was hitched to a power winch fixed on the truck. Men got behind the elephant and started to prod her up the heavy plank.

And Chang—mighty Chang who had smashed seven of the monsters men had brought to overcome her, met her match. Everytime she exhibited reluctance to march in the direction intended, she felt a powerful tug forward, and powerful enough it was, for Chang gave in. She fairly rolled up and into the improvised home, where she was made fast.

But it was far from over. The Gerosa chauffeur who had the job of driving Chang those nightmarish miles from Manhattan to Brooklyn, can finish the story. Chang had not been trifled with. Chained to the floor of the truck, her trunk had been fastened securely to a heavy belt encircling her middle. Besides, her keeper rode with her and he had brought a stick along used in tapping her and making her obey if she inclined to be unruly.

But just as Manhattan Bridge was reached, Chang broke loose. Her trunk, sailing free, completed a semi-circle, then ripped at the canvas. The upright on which the canvas lay, began to wobble.

"Whoa!" shouted Chang's keeper, tapping Chang with his stick.

They were on the bridge now when Gerosa's chauffeur thought his heart would stop. Chang, her moorings loose, moved towards the chauffeur's cabin. As the poor fellow drove, Chang's trunk like a coil of corrugated metal, came twirling for his wheel.

"Hey!" yelled the chauffeur, contemplating the slippery road, the narrow passages of the bridge and a drop
(TURN TO PAGE 52, PLEASE)

truck splintered. Its body crashed.

"It's the last straw," moaned the trucking company's supervisor. "Pack up, boys. We're through!"

Another outfit came on the scene. Again men were put through their paces. A truck backed up to where the pachyderm lurked in her lair. Once more there was the lifting of the animal's trunk, the cry, and curtains to

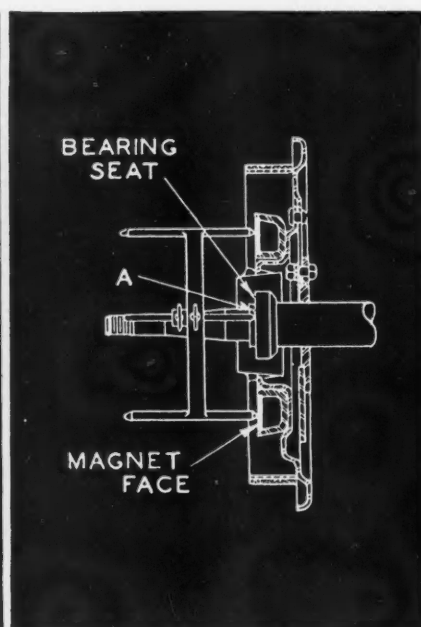
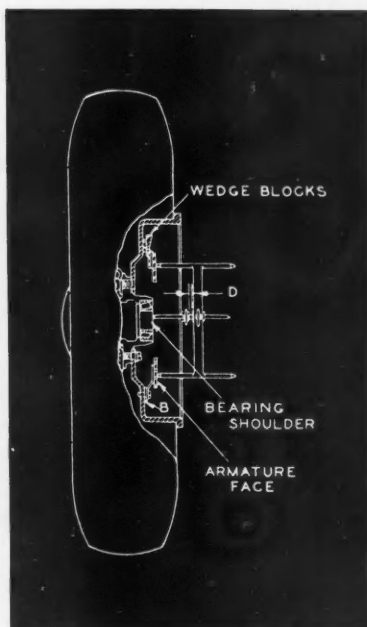
truck number three. Before it was over, seven trucks had been counted out and Chang, quite unruffled, awaited more comers.

The keeper got on the phone. He called the Gerosa Hauling & Warehouse Corp. at 777 E. 138th St., New York. "I've got an elephant," he said, "I've got to move him!"

The Gerosa people answered the call

Servicing WARNER

ELECTRIC BRAKES



SERVICING the Warner electric brake is simplified by the fact that there is no band-to-drum adjustment since the brake will operate satisfactorily throughout the life of the lining without take up at this point. However, the brakes should be inspected at the regular inspection period and a few simple rules will guide the mechanic both in preventive maintenance and in shooting trouble should his inspection disclose that the brakes are not operating at full efficiency. The same rules apply to drums, bands and lining as apply to any other brakes.

If the mechanic encounters a condition of no brakes or intermittent brakes, the first step is to check the current at the brakes. Current at the brakes should never be below 2.6 amp. To get the reading.

1. Disconnect one brake wire only.
2. Connect one side of low reading (10-15 amp.) direct-current ammeter to the brake and the other side to terminal of wire removed from brake. Leave the other brake in the circuit.
3. Take reading which should be not lower than 2.6 amp.

4. Reconnect brake and connect ammeter into opposite brake circuit. Reading should not vary more than 1/10 amp. from current at brake first tested. If it does or if there is not current at either brake—

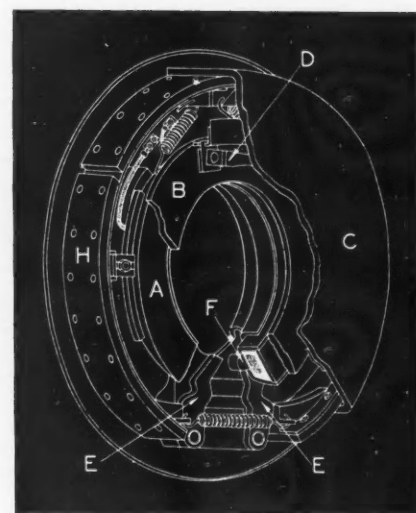
5. Check entire brake circuit for broken wires.

6. Clean and tighten all connections at brake, controller, load control and socket. Check welded grounds.

7. Short out controller by connecting both wires to one controller terminal. If brakes are effective at this time controller is defective.

8. Check for broken wire on magnet after removing wheel. If the wire is broken outside magnet, repair if possible. If no current flows through magnet, replace with new magnet.

9. Check armature contact with magnet. The armature must be depressed approximately $\frac{1}{8}$ in. against the magnet when drum is mounted in running position. This check can be made with the gage illustrated which can be obtained from the Warner Electric Brake Mfg. Co. for \$1.50. To make the check—



10. Place short ends of gage against magnet face.

11. Slide adjustable rod against bearing seat and tighten thumb screw in gage.

12. Slide collar against frame and tighten thumb screw in collar.

13. Loosen thumb screw in gage and place inner bearing in hub.

(TURN TO PAGE 111, PLEASE)

COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937



"EVER HEARD THIS ONE?"

TEN to one you've been told that "all power brakes are pretty much alike, so you might as well get the cheapest ones you can find."

It simply isn't so.

There is only one system of Power Braking that gives you all—or even comes close to giving you all—the advantages which your investment owes you. Bendix builds it. It's used on nearly ten times as many vehicles as all other forms of auxiliary or supplementary braking *combined*. It's been famous for a dozen years. It's called Bendix B-K Controlled Vac-

uum Power Braking. It's *not* high priced—in fact, costs very little more than the very cheapest. It *alone* affords "reactionary cushioning," which prevents sudden lockwheel stops—just one of many exclusive Bendix B-K features.

Available as factory equipment on most trucks—quickly installed on any truck—complete kits for popular makes—service all over America. Write—

BENDIX PRODUCTS CORPORATION
(Subsidiary of Bendix Aviation Corporation)
401 Bendix Drive, South Bend, Indiana

ASK 'EM TO MATCH THESE

- ★ More Than Meeting All State Laws
- ★ Least Weight Added
- ★ Fewest Added Parts
- ★ Low First Cost
- ★ Practically No Maintenance
- ★ Instant Remote Control
- ★ All Emergency Features of Train Operation
- ★ Quick, Easy Installation
- ★ Original Brake System Being Left Intact
- ★ Fully Controlled Power Application
- ★ A Nation-Wide Exchange Service Plan
- ★ A Nation-Wide Service Organization
- ★ Years of Power Braking Experience and Unapproached Protection Over Future Years of Satisfying Service

BENDIX

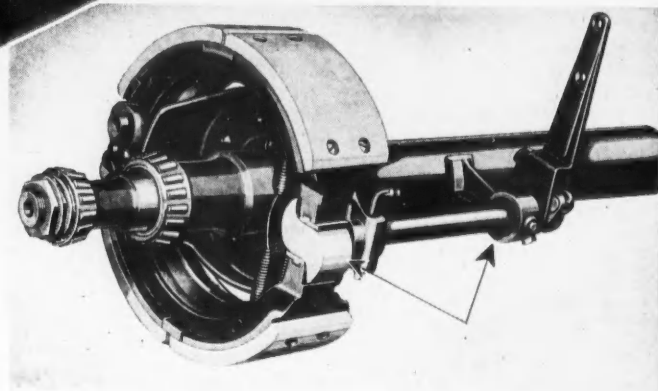
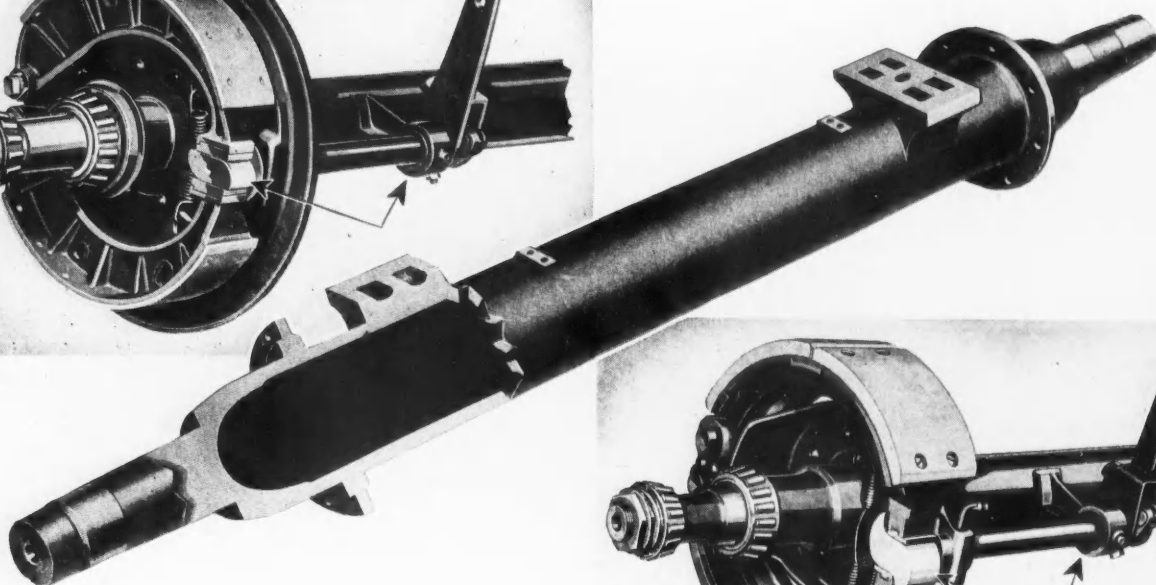
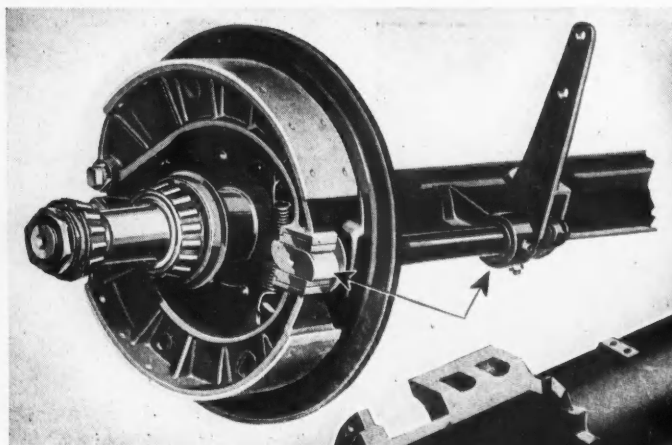
Controlled Vacuum

POWER BRAKING



COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

When writing to advertisers please mention Commercial Car Journal



All of the new Timken tubular trailer axles are designed to accommodate a variety of Timken two-shoe brakes which may be operated either by vacuum power cylinders or brake chambers mounted on the axle. At upper left is shown the Timken mechanical brake with constant lift cam and adjustable lever fitted to the new T-11000 axle. Directly above is a Timken-Westinghouse mechanical brake on the T-13000 model. The cross-section is of the new T-15000 axle.

New

ACTUAL practice in the use and loading of commercial trailers points to the fact that the majority of all semi-trailers fall within the limits covered by three definite axle capacities. For this reason the Timken-Detroit Axle Co. is introducing three new basic trailer axles, known as the T-11000, T-13000, and T-15000 Timken tubular trailer axles.

Heavier tubular sections and larger diameter spindles, as compared with earlier models, are used in these axles in order to secure the near rigidity of axle beam, which is of prime importance with trailer axles. Maximum tire life and the free-rolling of trailers are thus obtained because tires are kept in proper alignment both in vertical and horizontal planes as long as axles are used within their rated capacity. Wheel bearings are of the modern short roll mirror-finish Timken tapered roller bearing type, with the load line of the tires so located with respect to the inner and outer bearings that the percentage of load carried by each bearing is directly in proportion

TIMKEN

TUBULAR TRAILER AXLES

Three Basic Capacities, Featuring Greater Rigidity, Larger Spindles, Fit Majority of Semi-Trailer Needs

to its capacity. Both bearings have equal life as a result of this load distribution.

Another outstanding feature of these axles is that they are designed to accommodate a number of sizes of Timken two-shoe brakes, which may be actuated by vacuum power cylinders or brake chambers mounted on the axle. Timken adjustable brake levers are standard equipment. Both heavy

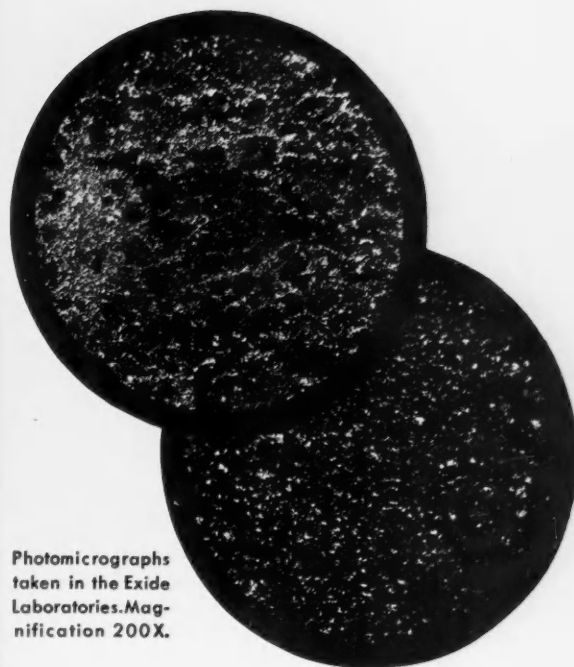
duty and mountain-type, two-shoe brakes, using $\frac{3}{4}$ -in.-thick brake liners and constant lift cams with integral cam shafts made from steel forgings are available on these axles.

All Timken brake drums are machined from Mehanite alloy iron castings, offering maximum resistance to wear.

These axles follow the Timken "Weld-Built" line of tubular axles.

COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

A pin-point imperfection can shorten a battery's life



Photomicrographs taken in the Exide Laboratories. Magnification 200X.

... so Exide photographs important battery materials through the microscope

DEPENDABLE performance and long trouble-free life are essential in a battery for truck service. That is one reason why Exide takes such extreme precautions to guard against flaws or weaknesses in materials used in the construction of Exide Batteries.

Tests start with the raw materials. And here the probing eye of the microscope reveals vital structural

facts. Specimens are photographed at high magnifica-

tion and checked against Exide standards. This is but one of the many ways in which Exide maintains rigid quality-control.

Fleet operators themselves have seen the results of these Exide methods in the substantially lower battery maintenance costs provided by Exide Batteries. The Exide line is complete, with Commercial Type Exides that take care of 90% of all commercial vehicles, and the Exide heavy-duty line for large trucks. Why not let Exide cut costs for you?

Exide

COMMERCIAL
TYPE BATTERIES

With Mipor and Slotted Rubber
"Mipor," Reg. U. S. Pat. Off.

THE ELECTRIC STORAGE BATTERY CO., Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

NEW PRODUCTS



ON PARADE

Pierce Zone Governor

PIERCE Zone Control is the name adopted for a new type governor which features three controlled speed ranges and a free range. Each range can be readily selected from the cab by a special four position switch. A series of three lights at the rear of the truck indicate the speed to which the truck is governed at any particular place or time. Chief value of the outfit, it is claimed, is the public good will gained by advertising the fact that the vehicle is operating within a fixed speed range conforming to the particular location. Pierce Governor Co., 116 Ohio Ave., Anderson, Ind., is the maker.

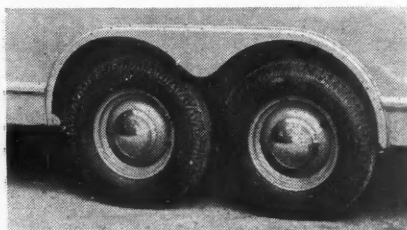
Grinder for V-8 "60"



SUNNEN Products Co., 7900 Manchester Ave., St. Louis, Mo., calls attention to the adaptability of its junior cylinder grinder for use on the Ford V-8 "60" engine. Employing the same principle as the standard model, this tool uses two stones and two non-cutting guides to assure a straight, round hole under all conditions.

Bender Tandem Axles

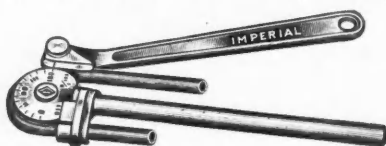
BENDER Body Co., W. 62nd St., Denison Ave., Cleveland, Ohio, has announced a new style of tandem spring suspension available on the larger models of its house-



type trailers. The regular 42-in. Bender springs are staggered with an overlap of 12 in., which cuts the distance between the outside of the two wheels to 3 in. Independent flexing strains are practically eliminated and 93 per cent of the trailer load is carried on the two axles, leaving but seven per cent on the draw bar. Particularly applicable for commercial use.

Imperial Tube Bender

IMPERIAL Brass Mfg. Co., 1200 W. Harrison St., Chicago, has announced a new hand tool designed to bend copper tubing rapidly without flattening or crimp-



LITERATURE FREE

1. AHLBERG Bearing Co., 3025 W. 47th St., Chicago, has just issued a ball and roller bearing application manual giving complete bearing information. It is available free to fleet operators.
2. ATLAS Service Shop Equipment Guide has just been released by Atlas Press Co., 1819 North Pitcher St., Kalamazoo, Mich. In writing ask for Bulletin 47S.
3. "BROCKWAY—The Right Way" is the title of a booklet just issued by Brockway Motor Co., Inc., Cortland, N. Y. Twenty-four pages of photographs showing Brockway equipment in use.
4. THE CINCINNATI Ball Crank Co., Disney St. near Marburg, Cincinnati, has issued two new catalogs covering the company's complete line of lubricating equipment as well as the service station equipment products of its Brookins Mfg. Co. division.
5. ERIE Malleable Iron Co., Erie, Pa., has just made available to fleet owners its new catalog of wheels, drums and wheel parts. Full specifications are illustrated by many drawings, and a complete truck and trailer application list is included.

ing. Known as model 364-F the tool is available in various sizes for tubing from $\frac{1}{8}$ in. to $\frac{3}{4}$ in. in outside diameter. Bending form is calibrated so that duplicate bends may be made at any angle.

Oil Renovators

K & S MOTOR PRODUCTS, Inc., 18 Hillside Ave., Hillside, N. J., claims outstanding results from its new dilution extractor



known as "Oildex" and from its triple-action oil cleaner, "Filtrex." Oildex, illustrated, takes fumes from the crankcase, filters out all dirt, heavy particles and excess water, delivers lubricated, volatile vapors to the carburetor. The Filtrex cleaner is of the heavy-duty type with replaceable cartridge containing a filter bag, cellulose element and wool filter disc.

(TURN TO PAGE 44, PLEASE)

Note: Any of the following items may be obtained by filling in the coupon on page 19.

6. HIGHWAY Trailer Co., Edgerton, Wisc., has issued a new loose-leaf catalog giving full specifications and prices of various Highway semi-trailer models. A special insert covering the "Freightmaster," Highway's newest trailer body, is included.
7. MONARCH Governor Co., 1832 W. Bethune Ave., Detroit, Mich., has issued Bulletin No. 9A giving complete description of Monarch governors for Ford 60 and 85 h.p. engines. Installation and operating instructions are included.
8. PERFECTION Steel Body Co., Perfection Building, Galion, Ohio, has recently issued three bulletins covering their new hydraulic hoists for all $1\frac{1}{2}$ and 2-ton short-wheelbase trucks.
9. "PYRENE Road-Tested-Advice" is the name of an informative booklet released by the Pyrene Mfg. Co., 560 Belmont Ave., Newark, N. J. It contains some handy tips on maintaining winter schedules and on chain costs per mile.
10. WESTERN Chain Products Co., 1807 Belmont Ave., Chicago, has issued catalog sheets covering its entire line of passenger car and truck chains, including towing and trailer safety chains.

**"My fleet has lost
its appetite for oil"**



WHEN you feed Gulfpride to the engines in your fleet, you can expect a definite drop in oil consumption.

But the story of this remarkable oil does not stop there.

For Gulfpride has the extra qualities that work toward a real, worthwhile saving in maintenance and repair costs.

Because it will form less objectionable carbon, gum or sludge in your engines, it will help you make savings in your maintenance costs. And because it is such an extremely tough motor oil, it will stand up in the biggest brute your fleet can boast of . . . help you cut down repairs.

Gulfpride will give your cars, trucks or buses the most dependable lubrication money can buy.

Behind Gulfpride's remarkable stamina is the Alchlor process—the only one of its kind—Gulf's exclusively. This process virtually removes all the non-lubricating waste from the 100% Pennsylvania crude of which Gulfpride is made.

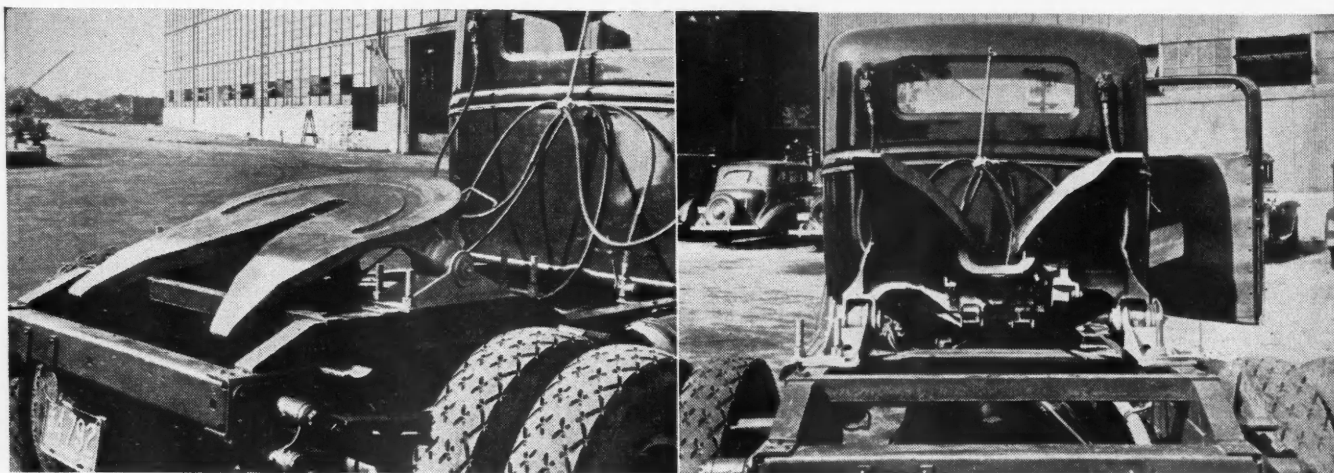
Try this amazing oil in your own fleet. We believe the savings it makes will be pleasant reading on your cost sheets.

Gulfpride
Reg. U. S. Pat. Off

The world's finest motor oil



Gulf Oil Corporation
Gulf Refining Company
Pittsburgh, Pa.



ASF Fifth Wheel

AMERICAN Steel Foundries, 410 N. Michigan Ave., Chicago, has developed a new-type 30-in. fifth wheel, illustrated at the top of the page both in normal and raised position. The gravity-type locking mechanism which provides positive elimination of uncoupling hazards may be seen as well as the rubber cushioning, which minimizes draft shocks between tractor and trailer. The coupling jaw is designed to utilize the complete area of the king pin, so that the direct shear prevents tilting. An unusual feature is the adjustable mounting through frame pivot brackets which permits installation directly over the frame side rails on any frame width from 31 to 38 in. No mounting plate is required. Alloy cast steel of high tensile strength is used, and working parts are reduced to a minimum.

Roll-About Groover

SAFE Tool Mfg. Co., Bridgeport, Pa., has introduced a tire regroover which cuts new treads while tires are on the car or truck, and which can be wheeled about much like the familiar garage jack. The car is jacked up, the groover rolled under the tire, and enough weight let down on the rollers so that when the operator turns his handle, the tire revolves against the two cutting knives. An entire regrooving job

can be handled in about five minutes, according to the maker.

Sleet King

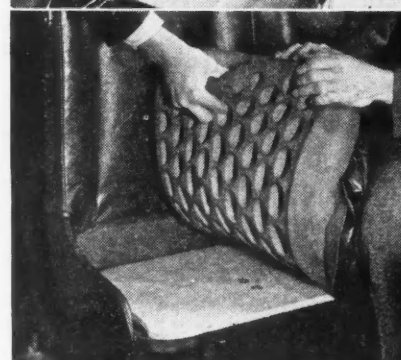
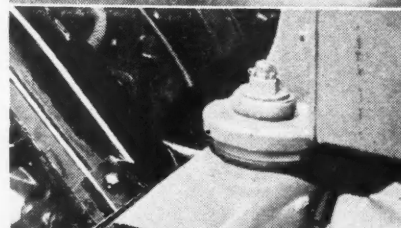
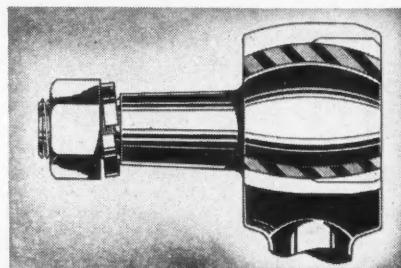
SLEET KING is the newest in chemical defrosting equipment offered by the Sleetex Co., 404 Fourth Ave., New York. Sleet King slides over the top of any standard blade and uses the regular blade action to distribute its solution over the entire arc of vision. Two extra refills, which slip into live rubber grooves without dismantling, are supplied.

Firestone Products

THREE important new contributions to the industry from the Firestone Tire and Rubber Co. are shown at the right. First, is the spherical rubber pivot end (shaded area) used in the Timken "parallel torque rod" system on all 352 series tandem drive axles and in the lower torque rods of the 452 series.

Next is a close-up of the special rubber mounting by which the entire cab is insulated from the chassis in the new Diamond-T cab-over-engine series. It's said to do wonders in adding to driver comfort.

And at the bottom of all this is the new Firestone latex whip sponge rubber seat cushion. Comfort, durability and cleanliness are its chief attractions, with the fact that it's fireproof thrown in.



New Truck Registrations by Makes by Months

	Autocar	Brockway	Chevrolet	Diamond T	Dodge	Federal	Ford	G.M.C.	International	Mack	Reo	Sterling	Stewart	Studebaker	White-Indiana	Miscellaneous	Total
January..... 1937	130	102	14,362	863	3,764	207	16,544	2,820	6,244	389	354	29	92	169	592	948	47,609
January..... 1936	75	94	15,124	495	6,207	223	14,606	428	4,743	90	339	8	85	143	493	607	43,760
February..... 1937	112	115	7,939	602	5,043	206	16,460	3,051	5,256	364	317	26	101	222	550	1,451	41,815
February..... 1936	57	88	14,978	510	5,556	170	12,226	758	4,365	107	217	4	62	134	408	661	40,301
March..... 1937	179	140	17,164	849	6,498	241	20,839	4,201	5,820	480	495	23	149	478	655	2,080	60,291
March..... 1936	88	127	19,511	634	6,751	205	16,168	1,551	5,395	184	264	17	73	221	477	762	52,428
April..... 1937	228	184	22,709	916	4,090	258	22,897	4,815	6,894	594	394	47	121	725	819	2,193	67,884
April..... 1936	121	179	23,323	784	8,817	271	18,493	2,733	7,308	299	379	21	112	327	700	1,099	64,956
May..... 1937	198	183	20,772	867	6,045	301	20,452	4,536	7,279	588	424	28	120	720	795	2,549	65,857
May..... 1936	109	168	21,443	754	8,507	275	17,971	3,045	6,704	440	399	16	116	358	719	1,159	62,183
June..... 1937	199	139	17,179	685	6,191	226	17,760	4,146	6,925	540	454	33	94	651	678	2,728	58,628
June..... 1936	96	137	19,045	660	7,777	287	16,930	2,820	6,151	427	325	28	113	320	599	1,136	56,851
6 Months..... 1937	1,046	863	100,125	4,782	31,631	1,439	114,952	23,569	38,418	2,955	2,438	186	677	2,965	4,089	11,949	342,084
6 Months..... 1936	546	793	113,424	3,837	43,615	1,431	96,394	11,335	34,666	1,537	1,923	94	561	1,503	3,396	5,424	320,479
% Change 6 Mos. . .	+91	+9	-12	+25	-28	+19	+108	+11	+92	+27	+98	+21	+99	+20	+120	+7

GIANT TIRES MOVE MOUNTAIN

by **LOWELL THOMAS,**
NEWS COMMENTATOR

• "They're cutting down Iron Mountain and hauling it away on Goodrich Tires. It's in



Shasta County, California. A mountain of low grade gold ore called 'Gossan,' heavy in iron. "First they blast to loosen the

ore. Then big shovels scoop up earth, drop it in huge trucks for the haul to the mill.

"No ordinary trucks are these. They're big fellows with specially-built bodies reinforced with steel rails. Bodies so rugged that they stand the crushing jolt of a three or four-ton boulder dropped from the shovel.

"Tires, too, must take terrific battering. No chance to reinforce with steel here—just rubber and fabric to take the shock—to carry 20-ton loads over sharp, jagged rocks. Trucks fight for a footing—wind their way down the mountain—the tremendous weight shifting from one tire to another—all in all a tire job believed impossible only two or three years ago. But these are Goodrich Silvertowns—'earth movers' weighing almost 500 pounds apiece. Tires developed by Goodrich engineers for

just such service. They tell me these tires have a load capacity as high as nine tons each—that they provide super-traction—that this is one of the greatest achievements of tire engineers."

Not many truck owners have jobs such as this at Iron Mountain. But every owner wants to get the same long mileage, freedom from delays and low cost of operation.

Goodrich Truck Tires give that kind of service on every job. The same basic construction that makes the tires stand up on the job of moving Iron Mountain is now used in every Goodrich Silvertown! On your hauls, whatever they maybe, you can now get long, trouble-free mileage at new low cost.

TIRES TRIPLE PROTECTED

It's because these truck tires are Triple Protected in the sidewall. Built with an invention that checks 80% of premature failures. Only Goodrich gives you this 3-way safeguard:

1 PLYFLEX—distributes stresses throughout the tire—prevents ply separation—checks local weakness.

2 PLY-LOCK—protects the tire from breaks caused by short plies tearing loose above the bead.

3 100% FULL-FLOATING CORD—eliminates cross cords from all plies—reduces heat in the tire 12%.

When you can get these tires without paying a penny premium, can you afford to take chances on tires without Triple Protection? See a Goodrich dealer today—ask him to give you proof of savings.



Goodrich *Triple Protected* **Silvertowns**
SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

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News

SUMMARY

Truck Output Continues 15% Ahead of 1936

Truck production in the United States and Canada during June totaled 83,987 units, an increase of 15 per cent over the 71,383 produced in the same month last

year. The June, 1937, figure was 91,826. Total for the first seven months of 1937 was 617,626 units, a 12.6 per cent gain over the corresponding period a year ago.

New truck registrations for July were estimated at 59,679, based on returns from 36 states. The July, 1936, total was 63,695, while the final June, 1937, figure stood at 58,626. During the first seven months of 1937, 401,759 trucks have been registered, compared with 384,177 in the same 1936 period.

Fight Kentucky Weight Law

Alleging that Kentucky, in limiting the weight, height and length of highway freight carriers, is acting in violation of

the 1935 Motor Carriers Act, forty concerns which operate freight carriers on Kentucky highways filed a petition recently in United States Court, Eastern Kentucky district.

The plaintiffs, which include sixteen Kentucky firms, contend the 1935 act superseded the Kentucky regulatory act, passed in 1932, and they point out that several highways were constructed, with Federal aid, to carry heavier loads than permitted, under Kentucky law, which allows a gross weight of 18,000 pounds.

Subsequently, the Interstate Commerce Commission has also filed a petition with the same court asking leave to intervene as a party plaintiff, claiming jurisdiction under the Motor Carrier Act over any maximum weight limitations.

Who Will Be Rogers' Successor?

Among persons mentioned for the post of Director of the Bureau of Motor Carriers, succeeding John L. Rogers, who has been made an Interstate Commerce Commissioner, are W. Y. Blanning, assistant director of the Bureau of Motor Carriers and former chief of the Bureau of Public Convenience, Pennsylvania Public Utilities Commission; W. A. Hill, chief examiner, Bureau of Motor Carriers, associated with the ICC for many years, and Walter Hayes, chief of Traffic Section of the Bureau, who was formerly with the traffic department of Sears, Roebuck & Co.

One of the 100 units of the Fred Olson and Son Motor Service, Inc., Chicago, with George Madison, Garage Superintendent

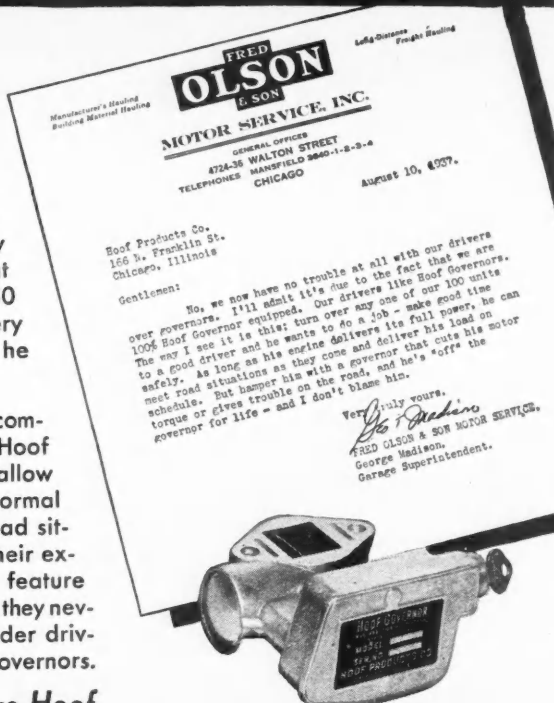


"Our Drivers Like Hoof Governors"

HERE'S convincing proof right from the front. George Madison, garage superintendent of Fred Olson and Son Motor Service, Inc., Chicago, and daily in touch with one hundred and fifty drivers, is frank. Read what he says of Hoof 10 to 50 series Governors on every one of the 100 trucks he handles.

Driving confidence and comfort is unimpaired with Hoof Governors because they allow maximum torque for normal engine power for any road situation. And because of their exclusive cantilever spring feature and but one working part, they never give trouble. No wonder drivers like Hoof Cantilever Governors.

Write for full 64 page Hoof Governor manual and supplement.



10 to 50 series Hoof "Key Type" Governor—speed can be changed only by person having key
Other Models—"Seal Type" and Key "Dash Control"

HOOF PRODUCTS COMPANY

162 NO. FRANKLIN
STREET

*Cantilever
Governors*

CHICAGO
ILLINOIS

C. C. McConville, who died suddenly on Aug. 10 suffering a heart attack in the Four Wheel drive factory of which he was superintendent



Private Carriers Division

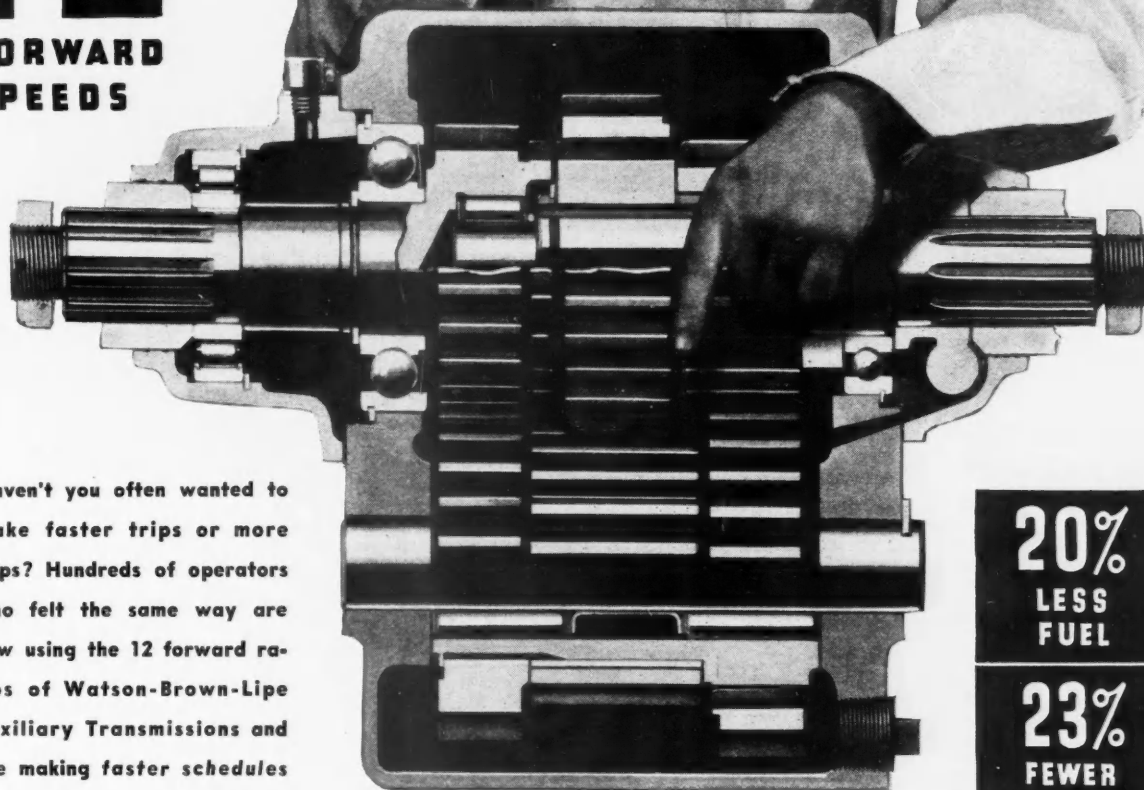
Considerable discussion over the advisability of the nation's private carriers becoming affiliated with the American Trucking Associations, Inc., was aired at a recent meeting in Chicago. It was one of several such meetings being called in various localities by John F. Winchester, Standard Oil Co. (of N. J.), who is head of the embryo ATA private carriers division.

Principle objection to the new set-up was the matter of the directorate which includes seven members from each state. Three would be elected by for-hire carriers, one by private carriers and three at large. Furthermore, it was felt that since the majority of the 108 different organizations affiliated with the ATA were largely for-hire in character, probably additional for-hire carriers would be represented by the three members elected at large. All in spite of the fact that the private carriers represent 85 per cent of truck owners.

W. H. Ott, Kraft-Phoenix Cheese Corp., who was chairman of the meeting, named himself together with F. L. Faulkner, Armour & Co., and a representative of the Sun Oil Co. as a committee to draw up a set of questions to be submitted to the ATA. These will be designed to clarify various features of the proposed affiliation.

**"YOU NEED
MORE GEARS...
IF YOU HAVE
FAST SCHEDULES"**

GET THE
HELP OF
12
FORWARD
SPEEDS



Haven't you often wanted to make faster trips or more trips? Hundreds of operators who felt the same way are now using the 12 forward ratios of Watson-Brown-Lipe Auxiliary Transmissions and are making faster schedules and more money from better performance. This auxiliary transmission overdrives and underdrives every standard gear to help you use your engine power to better advantage.

The same engine delivers twice the pull at the rear wheels in low-low. With overdrive third and underdrive-high you're equipped to maintain schedule time through traffic and up long gradual grades. 12 ratios prevent engine lugging or racing, save wear-and-tear, decrease oil and gas consumption. Ask for catalog and name of your nearest Watson-Brown-Lipe Dealer.

20%
LESS
FUEL

23%
FEWER
R.P.M.'S

52%
MORE
POWER

AUXILIARY

WATSON-BROWN-LIPE
Transmissions

H.S. WATSON CO., SAN FRANCISCO & TOLEDO

COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

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Autocar's president, Robert P. Page, Jr. (right) and Vice-president H. M. Coale snapped on the deck of the Aquitania as they returned from a European trip. Maybe there's something in those big European-order rumors.

SALES

HERCULES Motors Corp., Canton, Ohio, recently delivered 100 of its DJXB Diesel engines to General Motors Corp. for use in Chevrolet trucks destined for foreign markets. The shipment, which was the first installment against a GM production order is believed to be the largest shipment of high-speed, heavy-duty Diesel engines for commercial vehicles in the history of the industry.

THE AUTOCAR Co., Ardmore, Pa., reports for the first six months of 1937 a net profit of \$288,880, after deducting all (TURN TO PAGE 51, PLEASE)



THE SERVIS RECORDER
Keeps trucks out of bad habits

Prevents
Disputes and
Misunderstandings

Best of all

Its MORAL EFFECT on the Good Driver!

If you were a good truck driver—and the boss didn't know it—how long would you remain a good truck driver?

You know the answer. Men don't do good work merely for wages. They want the boss to know that they are doing good work. And if the boss doesn't take an interest in what his trucks are doing, then who will?

And there's where the *moral effect* comes in. Consider the fleet that is equipped with *Servis Recorders*. Their charts show all the working time and idle time daily, for each truck. The drivers know, in the first place, that the boss in the office gets an absolutely correct report not only of what one truck did but what all the trucks did. Poor work stands out graphically and so does good work. There is justice in that. Routes are evened up, abuses are corrected, bad habits are prevented, no one is accused unfairly.

The boss gets all these facts—so when he speaks, he speaks quietly, for behind his words is the weight of scientifically correct testimony and all his men know and respect it.

Thus moral effect works smoothly and it works all the time. The mere fact the *Servis Recorder* is on a truck accomplishes wonders. Write for our 40-page Time Record Book—it's free.

THE SERVICE RECORDER CO., 1422 Euclid Ave., Cleveland, O.



"There are the facts, boys"

Complete CCJ Truck Specifications Will Be Published in October

Line Number	MAKE AND MODEL	GENERAL (See Keynote)	TIRE SIZES	ENGINE DETAILS	TRANSMISSION	REAR AXLE	FRONT AXLE	BRAKES	C-A Dimension (Std. W. H.)	Side Rail Dimensions	FRAME
1	Mack.....FH	Standard Price \$8000 160 172	Standard 10.50 24D 12.00 24	Max. Brake H.P. at R.P.M. Torque lb. ft. Comp. Ratio Displacement No. of Cylinders, Bore and Stroke Make and Model	Y Own BX Y Cla 200V	4 Own FH 5 Tim 94420	Own BQ Tim 31020N	7S1 1194 a 320 477 N 666 976 G 639 976 G	91 60	10 1/2 x 3 1/2 x 3 1/2 8 1/2 x 3 1/2 x 3 1/2	T T
2	Studebaker...J20D 2-3	Standard Price \$8935 134 134 65000 1040 120 120 72000	Standard 10.50 20D 10.50 20D 13.50 20D 13.50 20	Max. Brake H.P. at R.P.M. Torque lb. ft. Comp. Ratio Displacement No. of Cylinders, Bore and Stroke Make and Model	Y Own BX Y Cla 200V	4 Own FH 5 Tim 94420	Own BQ Tim 31020N	7S1 1194 a 320 477 N 666 976 G 639 976 G	91 60	10 1/2 x 3 1/2 x 3 1/2 8 1/2 x 3 1/2 x 3 1/2	T T
3	Four-Wheel Drive F.W.D.....T68 20-28T72 25-30	Standard Price \$8935 134 134 65000 1040 120 120 72000	Standard 10.50 20D 10.50 20D 13.50 20D 13.50 20	Max. Brake H.P. at R.P.M. Torque lb. ft. Comp. Ratio Displacement No. of Cylinders, Bore and Stroke Make and Model	Y Own BX Y Cla 200V	4 Own FH 5 Tim 94420	Own BQ Tim 31020N	7S1 1194 a 320 477 N 666 976 G 639 976 G	91 60	10 1/2 x 3 1/2 x 3 1/2 8 1/2 x 3 1/2 x 3 1/2	PC PC
5	Six-Wheeler International.....D-216-T 2F 2-4	Standard Price \$1760 176 194 21000	Standard 10.50 20D 10.50 20D 13.50 20D 13.50 20	Max. Brake H.P. at R.P.M. Torque lb. ft. Comp. Ratio Displacement No. of Cylinders, Bore and Stroke Make and Model	Y Own BX Y Cla 200V	4 Own FH 5 Tim 94420	Own BQ Tim 31020N	7S1 1194 a 320 477 N 666 976 G 639 976 G	91 60	10 1/2 x 3 1/2 x 3 1/2 8 1/2 x 3 1/2 x 3 1/2	T

(CONTINUED FROM PAGE 48)

charges and taxes but before making provision for the Federal undistributed profits tax. The net profit on a comparable basis for the same period of 1936 was \$37,089.

APPOINTMENTS

THE WHITE Motor Co. has announced the appointments of Robert J. Purcell as New York State district manager with headquarters in Cleveland, David L. Hennigar as branch manager at Buffalo, and Charles H. Miller as export service manager.

PAUL JONES, veteran newspaper man and promotion editor of the *Cleveland Press* for the past two years, has been named director of the publicity division of the National Safety Council, Chicago. He succeeds Tom A. Burke, who resigned recently to become executive secretary of the Advertising Club of New York.

THE LINTERN Corp., Cleveland, has announced the appointment of the Bendix Westinghouse Automotive Air Brake Co. of Pittsburgh, Pa., as distributors throughout United States and Canada for the complete line of Lintern Sanders.

LAMINATED Shim Co., Inc., Long Island City, N. Y., announces the appointment of Owen C. Jones as assistant to president and in charge of sales promotion. For the past 6 years he has been associated with The Linde Air Products Co.

CIRCO Products Co., Cleveland, Ohio, has been named as sole distributor for Shoemaker line boring and connecting rod rebarbbiting equipment.

CLAYTON FARRIS, president of the Trucktor Corp., Newark, has been elected vice-president and general manager of the National Motor Truck Show, Inc., which will conduct the Fourth Annual National Motor Truck Show to be held at the Newark Centre Market, Nov. 6 to 12, inclusive.

FRANK TIGHE, formerly managing editor of *Motor Age*, a Chilton publication, has joined the staff of Roche, Williams & Cunningham, Inc., of Chicago. Mr. Tighe will make his headquarters at South Bend, Ind., where he will concentrate on the Studebaker account.

GENERAL Tire and Rubber Company has announced the appointment of Ralph Harrington as advertising manager. He has been a member of the advertising department since 1928 and, previous to that time, was engaged in sales promotion work.

LINCOLN Electric Co., Cleveland, Ohio, announces it now has named William F. Fischer, as its Sacramento, Calif., representative.

THE ELCO Grease and Oil Co. of Cleveland, has named John A. Robinson as sales manager. For many years Mr. Robinson has been an original equipment representative for Timken bearings.

COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

Speaking of HEIN-WERNER HYDRAULIC JACKS



—they are
built right



—and they are
priced right



• Five words quickly and fittingly describe this complete line. Hein-Werner Hydraulic Jacks are **BUILT RIGHT and PRICED RIGHT.**

All H-W hand jacks for passenger car, truck and bus service are **TESTED at 1½ times** their rated capacity... They are sturdy and safe, and as for being priced right—the present low prices speak for themselves, especially when quality is considered.

Bullet 1½ ton model, \$2.80 (West Coast \$3.10)... Light Truck Special, 2 ton model, \$3.70 (West Coast \$4.10)... For light trucks, 3 ton models, \$6.95 (West Coast \$7.50)... 5 ton models, \$8.95 (West Coast \$9.65)...

7 ton models, \$11.75 (West Coast \$12.60)... For heavy trucks, buses and shop use—12 ton models, \$17.50 (West Coast \$18.50)... 20 ton models, \$30.00 (West Coast \$31.00)—and for modern passenger cars, our new BUMPER-LIFT Light Model, \$4.95 (West Coast \$5.45), and the BUMPER-LIFT Heavy Model, \$5.45 (West Coast \$5.95). All prices are net to the dealer.

Hein-Werner also manufactures a complete line of Floor Jacks, and they, too, are built right and priced right... Ask for details.

HEIN-WERNER MOTOR PARTS CORP.
WAUKESHA, WISCONSIN

FEW MODELS ENGINEERED TO DO THE WORK OF MANY

HEIN-WERNER
hydraulic **JACKS**

When writing to advertisers please mention *Commercial Car Journal*

Get a Load of Loads

(CONTINUED FROM PAGE 37)

of some 800 feet below. But Chang had other ideas and reached for the iron-work of the bridge, seeking to grab and hold on.

Imagination cannot exaggerate the relief Gerosa's man felt when Prospect Zoo in Brooklyn loomed at last and whimsical Chang moved out.

HARROWING as the adventure was, it was, in reality, part of the day's work

for the Gerosa force. In 1919, Lawrence Gerosa, present head of the firm, acquired a light Ford truck and began to haul bathtubs, radiators and boilers. While thus engaged, possessed of a fertile mind and realizing the potentialities of heavy hauling, Mr. Gerosa devised equipment for getting heavy objects into cramped quarters. Today, the Gerosa organization numbers something like 141 units, including trailers that hold as much as a freight car and can turn a corner as sharply as a truck. Double turnables, tractors with fifth wheels, gooseneck trailers, dollies and

trunnion wheels are among the equipment used.

That there is much more to it than equipment, however, may be gathered from a study of Gerosa operations. To say that they are through would be putting it mildly. Working hand-in-hand with engineers, employing "trouble-shooters" to analyze and solve problems of hauling and transport, the Gerosa firm has made of hauling as nearly a science as is possible under conditions often beyond its control.

An interesting example was the crown shields that this company undertook to haul several years ago.

Crown shields are great metal rings, weighing 326,000 pounds each, and are used in subway tunneling. As a rule, when segments of tunneling are completed, the engineers turn these enormous metal rings to one side—probably under a neighboring building, and bury the shields in concrete. However, as new shields cost \$40,000 apiece, and money can get scarce, the desirability of conserving these shields and using them again can be seen. But how to move these shields from one digging to another is the problem, and in the days anteceding the Gerosa firm, was considered insuperable.

THE crown shields, in particular, lay ninety feet below the street surface, and burrowing straight down, Gerosa workmen gradually jacked the shields up to the street surface. This done, the shields were raised on cribbing, a heavy platform was built underneath them, and then, one by one, the shields were lowered onto special gooseneck trailers, provided for the purpose. Towering twenty-five feet in air, the shields were towed through the streets of the city, the prodigious weight distributed over eight cushion tires.

Starting after 10 P. M., the trailers were anticipated by linemen who went ahead to cut trolley cables so that the cargo could pass without hindrance. Previous to this and always a marked feature of Gerosa heavy haulage, experts went over the route laid out for the trailers, looking for weak spots in the pavements and studied maps carefully so that the exact location of mains and manholes might be ascertained.

When the shields were finally deposited at a location a mile and one-half from the starting point, the Gerosa firm had the satisfaction of knowing not only that it saved the subway construction organization \$80,000, but that it had established an all-time record for heavy haulage.

AN interesting variety of haulage jobs stand out. Among these, the tale of the
(TURN TO PAGE 106, PLEASE)



IS BUILT INTO THESE MARKER LIGHTS!

Arrow Marker lights do a definite job. They provide high visibility from all angles. They are much more than ornaments. In construction they are built to stand the gaff.

Arrow Safety Marker Lights are made in legally approved models. Scientific lens design makes Arrow markers gleam for hundreds of feet in black night.

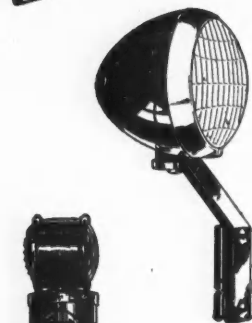
Insist upon, demand, and get Arrow highway protection for your rolling stock. It costs no more!

Arrow Directional Signals Complete Line

Install Arrow Directional Signals, not just to be within the law, but to add safety to "payloads." The Arrow line includes all popular approved combinations. Arrow's are the choice of fleet operators and truck manufacturers everywhere.

Arrow Driving Lamps

Improve night visibility with Arrow Driving Lamps. The scientifically designed lens capture all fringe rays—and concentrate them into a powerful, penetrating, fan-shape beam.



Ask your
Jobber

**ARROW SAFETY
DEVICE COMPANY, INC.**

MEDFORD, NEW JERSEY

There's Only

**ONE
WAY**

..to **ARRIVE AT A TRUE
COMPARISON OF TIRE COSTS**

To determine the actual cost of a tire, you must know, first, how far it has gone and how many tons or packages it has carried. This mileage and payload, divided into the purchase price, gives you the final cost. The initial price of a tire alone means nothing.

To determine whether your tire costs are high or low, you should make a comparison with the cost of the tires you are now using. It should prove interesting to you to try a set of Generals on a truck on which you have kept accurate cost records.

General urges this comparison, because General Truck Tires have always been built stronger—to do their work better—deliver greater mileage and haul more payload.

It costs more to build a General Truck Tire because of the way it is built. Thousands of truck operators know it costs less to use Generals because of the way they perform.

Your local General Tire dealer is ready to offer you the benefit of his factory-training and practical truck tire knowledge. He may be able to reduce your tire costs materially.

THE GENERAL TIRE & RUBBER COMPANY • AKRON, OHIO
In Canada—The General Tire and Rubber Company of Canada, Ltd., Toronto, Ontario



STRONGER—All plies are *full* plies anchored at the bead—no floating "breaker-strips"—every inch and every ounce is there for just one purpose—to produce more miles and a lower cost for you.



COOLER—They flex uniformly without that heat-producing "hinging action" of ordinary breaker-strip tires. Heat kills the life of cords and cuts down the miles in a tire. Generals are *cool*—that's why they run more miles at a lower cost for you.



"COMPACT RUBBER" TREADS—All tires stretch due to fatigue in the fabric, but Generals, having no idle, half-way plies, stretch least of all. The tread is kept compact and compressed against the road—that's why it produces more miles and reduces your cost.

**THE TRACTION
TREAD**

**THE
HIGHWAY**

**THE COMMERCIAL
DELIVERY**

**THE CLEATED
TRACTOR**

**THE
JUMBO**

**THE
ALL-GRIP**



One of the most complete lines in the business—each tire built to give you more miles for less money

GENERAL TRUCK TIRES

Racing Cars and Trucks Are Brothers Under the Hood

(CONTINUED FROM PAGE 27)

O'Neal does more than talk engines—he gets into them. At Huber and Huber's shop in Knoxville he does all the work on 11 trucks and handles emergency jobs on 40 others operated from the firm's Louisville, Ky., terminal. His work ranges from painting a number on a door to a complete body rebuilding job from front bumper to tailgate, and from adjusting a spark plug gap to putting new sleeves in a rebuilt job.

"THE connection between a racing car and a truck so far as the mechanic is concerned is in the precision of adjustment and repair that is necessary," O'Neal declares. "Of course the racing engine is constructed differently for a different purpose than the truck engine. But the man who is likely to finish on top in a race is the one whose car is tuned to perfection. The trucking firm that gets its full money's worth from its equipment is one that sees that trucks are always in top notch shape.

"Coarse work won't do on a racing car. You might just get by with it on

a truck. But by doing just a little better valve job or just a little better bearing job than called for by specifications, I get much better results all around."

Huber and Huber think well of O'Neal's racing experience and agree that he gets the most out of a balky engine by calling up his racing tricks.

"Racing drivers, for instance, don't dare lose oil through the small leaks often permitted by truck operators," O'Neal points out. "At Indianapolis we were limited to six gallons of oil for the 500 miles. Those high-speed engines took more oil to cool and lubricate and we couldn't afford to lose a drop. So by carefully checking lines, pumps and gaskets on all our trucks, operated thousands of miles each year, we make substantial savings. Oil pans too are checked for the tiniest leak.

"Some truck operators allow 4 to 7 qts. of oil on the 210-mile trip over difficult hills and bad roads from here to Atlanta. We find that doesn't pay and tear down the engine if it uses more than 3 qts. The cost of the overhaul is more than made up in oil saved.

"In some cases use of a lighter oil than that specified will give greater gasoline economy. A study of the operating temperatures in connection with road and weather conditions is profitable. It aids in determining the grade of oil best to use, the carburetor adjustment, and whether thermostats are necessary. Careful attention to air cleaners, fuel pumps and gasoline jets will keep up the miles per gallon rating of motors much longer."

ENGINE tune-ups are made every seven days or 1800 miles. O'Neal pays special attention to synchronizing the ignition and fuel systems. For specifications, he uses everything he can get from *COMMERCIAL CAR JOURNAL* and from factories. But even these are seasoned with his racing experience when conditions indicate special settings are in order.

Under this man's watchful care Huber and Huber trucks rarely come in for a major overhaul under 100,000 miles. When they do come in, O'Neal is right there with more of his own ideas.

"I never fit anything closer than oil clearance (.00015 in.). Parts shouldn't have to fit closer than that at any time. Fitting them too close in the hope they will wear in is out-of-date. Parts just get hot and wear out.

"It pays to use the best," he said. "That's why I often throw away parts that other mechanics would save and use. A truck with a worn part is no asset, it's a liability. On the race track a sudden breakdown might mean death.

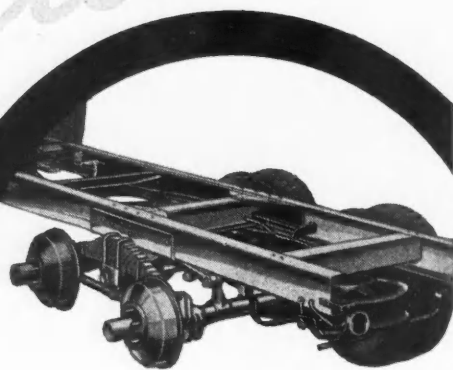
(TURN TO PAGE 56, PLEASE)

HERE'S THE KIND of

you like to know about

“This Timken 6-Wheel Conversion Unit has been under five chassis. Each of the five did fifty to seventy thousand miles under heavy load. Replaced one wheel-bearing and two torque rods.”

STORMS COAL & COKE CO.



TIMKEN 6-WHEEL
CONVERSION UNIT



Just one of many amazing records that guarantee you lower hauling costs with the TIMKEN 6-WHEEL CONVERSION UNIT

THE TIMKEN-DETROIT AXLE CO., Detroit, Michigan

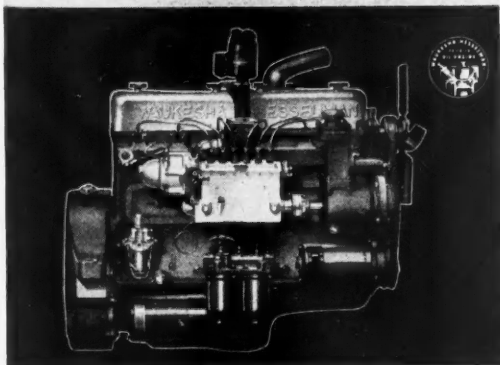
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COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

Saving \$100 monthly *per bus* in fuel cost



WAUKESHA HESSELMAN ENGINES



A fuel saving of \$100 every month—for each bus! That's the record of these Waukesha-Hesselman-powered Cuban buses. Burning modern high speed diesel fuels they attain a speed of 60-65 m.p.h. and get 15 miles to the gallon of fuel used, when loaded. In constant operation between Havana and Santiago . . . a distance of 600 miles . . . most of them have now gone 100,000 miles each.

The bodies of these buses were built in Havana, Cuba, on Condor FCW Trucks made by Condor Motors, Inc., of Chicago. Under the hoods are Model 6-BKH Waukesha-Hesselman Oil Engines, 60-70 hp, 6-cyl., 3 $\frac{3}{4}$ in. x 4 $\frac{3}{4}$ in., 282 cu. in. displacement.

The Waukesha-Hesselman is *not* a semi-Diesel. A moderate compression, solid injection oil engine, with precisely timed electric ignition, it starts as easily, runs as smoothly, and is as simple to understand and operate as a gasoline engine. Upkeep is lower. First cost is moderate. Write for Bulletin No. 978.

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN
NEW YORK . . . TULSA . . . LOS ANGELES

(CONTINUED FROM PAGE 54)

With a truck, it might result in a fatal accident or just a costly overhaul job that might have been simple and inexpensive in the first place."

When O'Neal tears a motor down for repairs he usually smooths down rough spots inside the manifold casting. It's another trick he picked up with racing engines. He says it gives more even power and economy.

He pays particular attention to metals. "Whenever a part breaks or shows unusual wear I like to find out why.

Sometimes it is the fault of the casting. Sometimes it is faulty lubrication. Knowing why a thing like that happens makes it easier to locate and prevent similar trouble in the future."

Frowning on the practice of using scrap iron and metal bars for braces, tire carriers, and body brackets, O'Neal comments:

"Tennessee has a gross truck and load weight law permitting us a maximum of 18,000 pounds. Scrap iron for braces and struts can easily run into 100 pounds. The use of lighter but perhaps more expensive metals for these

purposes adds to the first cost, but this is more than made up by the saving in weight. Weight taken off these non-essential parts means more payload."

Overhauling Zenith Carburetors—Series IN180

(CONTINUED FROM PAGE 25)

10. Install main jet adjustment or a lower plug and gasket.

11. Replace compensator jet and gasket.

12. Install well block assembly using leather gasket only when compensator jet is installed in the well block. When D8919 well block is used, compensator must be installed in the bowl and no gasket is required.

13. Replace accelerating pump assembly, using the same pump spacer.

14. Fill the bowl with gasoline to see if all channel plugs are leakproof and to test operation of accelerating pump.

15. Replace throttle shaft in barrel and install throttle plate. Make certain plate fits close to barrel all the way round when closed and with the stop screw backed out away from the stop pin. When throttle plate has been properly centered, hold firmly in closed position while screws are tightened.

16. Adjust throttle stop screw to hold throttle plate screw slightly open.

17. Assemble bowl to barrel after placing the gasket in position and connecting the pump rod to the pump link.

18. Replace vacuum piston assembly and gasket in cover assembly using a thin-walled 7/16 in. box wrench.

19. Replace fuel valve seat and gasket. (Special wrench recommended.)

20. Place the new fuel valve needle in position and install float and float axle. Make sure float moves freely.

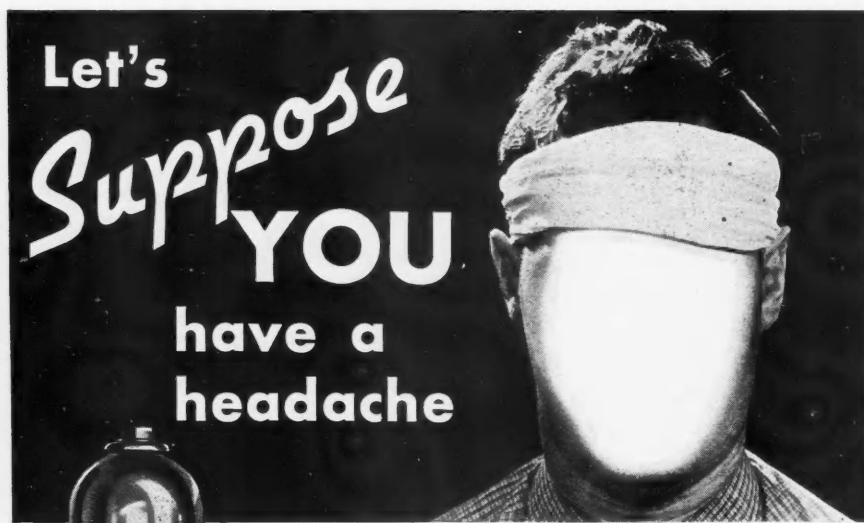
21. Hold the cover assembly upside down to observe position of float which should be nearly parallel to the gasket surface of the cover. Held upside down, the furthest edge of float should be 1 13/32-1 32 in. from flat surface of cover. See Fig. 7.

22. Place new cover gasket on cover and hold in position while cover is placed on bowl.

23. Start all cover screws and tighten down evenly till snug.

24. If carburetor is fitted with a two-piece removable venturi, there is a channel in the end of the bowl casting. This is closed at the inner end by the venturi. A lead channel plug (Zenith CR137-28) should be driven in the channel. This should be done when fully assembled.

25. Set idle adjusting needle at one full turn open and the main jet adjustment (if any) at one full turn. Carburetor is now ready for installation, and will run engine until it is warm enough for final adjustment.



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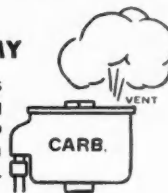
Permits new pump purchases at a saving with turn-in of vacuum tank, mechanical pump, or ANY type Autopulse—or purchase of factory rebuilt pump with new pump guarantee.

... and investigation reveals that thousands of others have been permanently cured with the same identical remedy. You would certainly be convinced that this remedy was worth a try.

If your fuel bills shoot upward with the thermometer, and vapor lock interrupts schedules, there is one positive way of banishing these troubles—**equip your fleet with Autopulse Electric Pumps.** Leading bus and fleet operators have—in the most emphatic way—demonstrated their faith in Autopulse—they have equipped EVERY unit on the road with Autopulse Electric Fuel Pumps.

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Mounted away from the motor, it supplies cool fuel, while camshaft pumps, being mounted on the motor, deliver fuel so heated that up to 15% passes out through the carburetor vent in the form of vapor.



● AUTOPULSE CURES VAPOR LOCK

Vapor lock, common with engine-mounted pumps, because they suck bubbles when heat boils the gas, is unknown with Autopulse, since it can be mounted in a cool spot where it pushes fuel in a solid stream.

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Genuine **WESTINGHOUSE AIR BRAKES**

AS LOW AS \$139.00 INSTALLED

How To Adjust Delco-Remy Regulators

(CONTINUED FROM PAGE 31)

to damage or completely burn out the generator armature and the relay winding.

CLOSING VOLTAGE—The closing voltage of the cut-out relay contact points can be adjusted by loosening the Lock Screw and turning the Eccentric Screw to increase or decrease the tension of the Armature Spring. Increasing the tension will increase the closing

voltage and decreasing the tension will decrease the closing voltage. With relay and regulator at operating temperature, check setting by bringing the generator to a complete stop, then slowly bring generator up to a speed which will cause the points to close. Tighten the Lock Screw securely after completing adjustments. Do not set closing voltage above the voltage required to operate the voltage regulator unit. If this occurs the voltage regulator will operate to prevent the voltage reaching the value needed to close the relay contact points. Note: The relay must be at operating temperature

and in operation position (i.e. Horizontal or Vertical) when the closing voltage setting is made.

VOLTAGE REGULATOR TESTS AND ADJUSTMENTS

(Refer to Fig. 3 and Test Specification Bulletins)

VOLTAGE REGULATOR SETTING

—The voltage regulator unit must be checked at operating temperature. Disconnect the lead from "Amm" regulator terminal and leave it disconnected while making this check. The unit is now operating on open circuit. Connect one of the voltmeter test leads to the "Amm" terminal on the regulator and the other test lead to a convenient ground. (Refer to Fig. 3.) Start the engine and run generator at not over 1500 r.p.m. and note voltage at which regulator operates. If incorrect, first adjust Point Opening. (See below.) Then adjust the voltage setting by loosening the Lock Screw and turning the Eccentric Screw to increase or decrease the tension of the Armature Spring. (Refer to Fig. 1.) Increasing the tension increases the voltage regulator setting and decreasing the tension decreases the setting. Tighten Lock Screws securely after completing adjustments. Check setting by slowing the generator until the cut-out relay points open and then increase the generator speed until the voltage unit begins to operate. Note: Voltage regulator must be at operating temperature and in operating position (i.e. Horizontal or Vertical) when setting is made. Caution: Do not under any condition set above the high limit given in the specifications.

POINT OPENING—Hold armature down against core and adjust contact point opening by adjusting Upper Contact Screw. Tighten Lock Nut securely after adjusting point opening. Note: When checking points for the correct point opening do not move the upper contact from its natural position. The Spring holding the upper contact should rise slightly above the Fibre Insulator (Fig. 1) when the points are together and at rest to insure a wiping action on the points when they are in operation. If contact points are pitted or burned, clean with a thin, clean, fine-cut contact file before adjusting the point opening.

CURRENT AND VOLTAGE REGULATOR —OPEN CIRCUIT TYPE

THIS type of regulator, designed to be set on open circuit, is illustrated in Fig. 4. It consists of a vibrating current regulator unit, a vibrating voltage regulator unit, and a cut-out relay mounted for convenience on the same base and enclosed by the same cover. (Cover not shown.) This type of regulator is used (TURN TO PAGE 60, PLEASE)

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SEPTEMBER, 1937

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OPERATORS CAN NOW COVER
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BUSINESS VOLUME WITHOUT
INCREASING NUMBER OF
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Many business men are inclined to think of truck economy in terms of gas and oil mileage. But V-8 speed also has an important effect on the economy of Ford V-8 Trucks and Commercial Cars. For example, read this letter from Chester H. Jackson, president of Standard Grocery Co.—L. A. Jackson, Inc., Indianapolis:

"Our fleet of ten Ford V-8 Trucks, servicing 150 food markets in Indianapolis, is showing such splendid results in delivery speed and low costs that we plan to open stores in many other Indiana communities. This decision results directly from the increased distances within which we can service stores from our Indianapolis warehouses. With the equipment we replaced, our operations could not economically be extended outside Indianapolis. With our 1937 Ford V-8 Trucks, distance is no handicap. In addition to their high load capacity and high performance, they are the most economical trucks we have ever owned."

Try a Ford V-8 Truck or Commercial Car under your own operating conditions. If your loads are light, try the thrifty new 60-horsepower V-8. If you want high road speeds or ability to haul heavy loads, try the economical 85-horsepower V-8 engine. Call your Ford dealer today and ask for an "on-the-job" test.

● Convenient, economical terms through the Authorized Ford Finance Plans of the Universal Credit Company



FORD V-8 TRUCKS

AND COMMERCIAL CARS

(CONTINUED FROM PAGE 58)

with the shunt type generators. Refer to Fig. 5 for wiring diagram.

These regulators are made for either one wire or two wire (insulated) systems. Fig. 5 illustrates a two wire (insulated) system. For a one wire or grounded system, the internal connections would be similar, but the A+ terminal of the generator and the terminal on the end of the regulator would be grounded. Be sure, in checking these units, that the meters used are of sufficiently high capacity.

PROCEDURE FOR CHECKING AND ADJUSTING THE OPEN CIRCUIT TYPE CURRENT AND VOLTAGE REGULATOR

CUT-OUT RELAY TESTS AND ADJUSTMENTS—Refer to Fig. 19 for method of connecting meters to make this check. It is necessary to bridge the voltage regulator contact points with a jumper lead, as illustrated, so the voltage regulator unit will not operate while making this check. Follow the procedure as outlined under "Procedure for checking and adjusting the open circuit type vibrating voltage regulator."

VOLTAGE REGULATOR TESTS AND ADJUSTMENTS—Refer to Fig. 7 for method of connecting meters to make this check. Follow the procedure as outlined under "Procedure for checking and adjusting the open circuit type vibrating voltage regulator."

CURRENT REGULATOR TESTS AND ADJUSTMENTS—Refer to Fig. 6 for method of connecting meters to make this check. It is necessary to bridge the voltage regulator unit points with a jumper lead as illustrated so that the voltage regulator unit will not operate while checking the current regulator.

Start engine and increase speed until generator is running at a moderate speed. Note current regulator setting on test ammeter. If incorrect, first adjust Point Opening. Then adjust the current regulator setting by loosening the Lock Screw and turning the Eccentric Screw to increase or decrease the Armature Spring. Increasing the tension will increase the current setting and decreasing the tension will decrease the setting. Remove jumper lead from across the voltage regulator contact points when adjustments to current regulator have been completed. Note: Current regulator must be in operating position (i.e. Horizontal or Vertical) when setting is made. Caution: Do not under any condition set above rated output.

POINT OPENING—Hold armature down against core and adjust contact point opening by adjusting Upper Contact Screw. Tighten Lock Nut securely after adjusting point opening. Note: When checking points for the current point opening do not move the upper contact from its natural position. The Spring holding the upper contact should rise slightly above the Fibre Insulator when the points are together and at rest to insure a wiping action on the points when they are in operation. If contact points are pitted or burned, clean with a thin, clean, fine-cut contact file before adjusting the point opening.

\$169 Million to Non-Highway Use

Nearly 16 cents out of every dollar of State taxes paid by highway users in 1936 was assigned to non-highway use, according to statistics collected from State authorities by the Bureau of Public Roads of the U. S. Department of Agriculture. Collections from State gasoline taxes, motor vehicle registration fees and motor-carrier taxes amounted to over a billion dollars. Allocations to non-highway purposes amounted to \$169,344,000, an increase of \$22,202,000 over the previous year.

Other allocations were \$583,616,000 for State highway purposes; \$255,496,000 for local roads and streets; \$37,942,000 for collection and administration; \$1,597,000 for other highway purposes such as park and forest roads, etc.; and \$8,346,000 was undistributed.

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SEPTEMBER, 1937

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From the air compressor to the weather cap on the exhaust duct, from the smallest touch-up spray gun to the largest canopy type exhaust, the comprehensive DeVilbiss System holds the solution to any painting problem.

In addition to everything needed for painting trucks, buses and passenger car fleets, DeVilbiss also produces a line of highest quality equipment for garage and service use, including air compressors, hose, hose connections, oil guns.

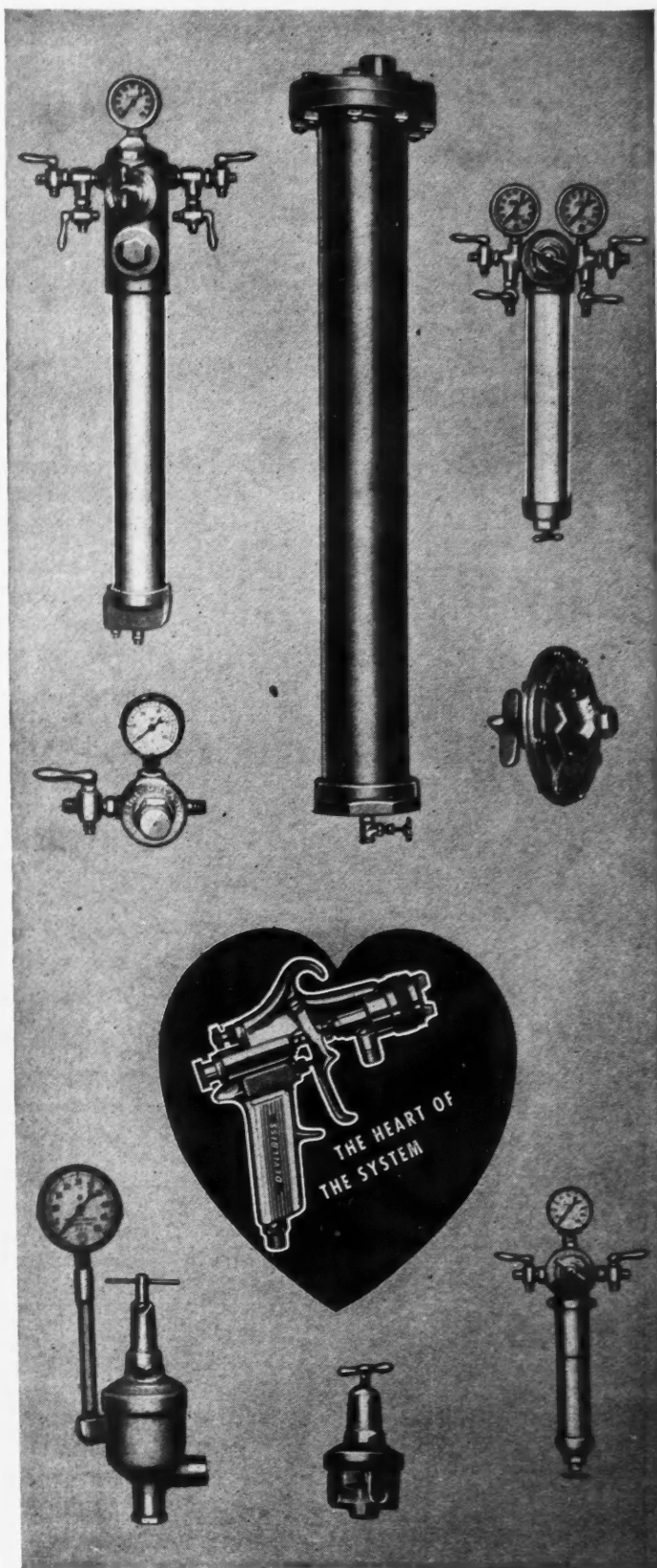
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COMMERCIAL CAR JOURNAL
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Fleet Operators Discuss Ability Factor

(CONTINUED FROM PAGE 20)

maintenance costs would not be affected by the imposition of a 4 at 20 factor; 15 said they would be lower; 6 said the effect would be "very slight", "very little", "not much"; one said he had already accomplished a reduction by means of the factor; 13 said maintenance costs would be increased; one said the effect would be "not good"; 18 gave no answers, and one said the effect would be to eliminate old equipment.

Seventeen said total operating costs would not be affected; 15 said they would be low-

ered; 5 said the effect would be "very little", "not much", "problematical", "and" little difference; 17 said total costs would be increased, a number of them explaining that unit or per mile costs would be reduced as the result of greater mileage; one said he had accomplished a reduction by means of the factor; 34 did not answer the question.

SURVEY QUESTION 9—61 said speeding up of trucks was economically imperative; 14 said it wasn't, and 14 gave no answer.

IN this group of replies it is apparent that the sentiment against slow-moving vehicles and in favor of an ability factor of some sort is pretty strong. Practically 90 per cent favor doing some-

thing about the situation. A division comes in what should be done. Even there those who favor an ability factor in the neighborhood of 4 per cent grade at 20 m.p.h. or better are in the majority. Only about 12 per cent definitely favor a factor lower than 4 at 20.

There is evidence also that among the fleets responding a factor of 4 per cent at 20 would not drastically affect their present equipment. About 68 per cent said from 75 to 100 per cent of their equipment could meet the factor right now. A logical assumption to be borne in mind is that the operators referred only to the equipment likely to be affected, i.e., that operating in hilly country.

It is also interesting to note that only about 15 per cent expected an increase in maintenance costs if a 4 per cent at 20 factor were imposed. About 62 per cent said the effect would be either nil, slight or lower.

Twenty per cent said total operating costs would be increased, and 41 per cent said the effect would be nil, slight or lower.

There was also an overwhelming indication that speeding up of trucks was considered an economic necessity. Sixty-eight per cent of the operators said it was; 16 per cent said it wasn't. If the replies to this question are scrutinized in the light of the vocations involved it will be found that the "noes" come largely from operators the conduct of whose business does not require fast operation.

THE vocational interest in the problem was borne in mind by quite a number of fleet operators who sent in questionnaires with pencilled notations saying their type of operation was not involved and consequently they did not feel qualified to participate. Naturally these returns were not made part of the tabulation even when a few questions were specifically answered.

It may seem curious to some that in the tabulation the location of the responding fleets is given territorially instead of by states. The reason for this is simple and sound: the territorial classification was chosen because it was more likely to preserve the promised anonymity of the fleets replying. If you can now identify more than a couple of replies you are just too good.

In their comments a number of operators, while admitting the hazard of slow-moving vehicles on hills and the need for an ability factor, expressed themselves either in favor of two-lane, dual highways or an extra lane on hills to be used by the trucks when slowed down. Two such suggestions came from officials in government service. One of

(TURN TO PAGE 64, PLEASE)

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-against heat
The bolt mechanism developed by Eberhard for its new No. 5633½ "Frostite" Lock pulls the door tight against the packing when closing and breaks the frost seal easily when opening.

-against thieves
The new "Frostite" handle latch can be secured quickly and easily with a padlock when necessary.

EBERHARD "Frostite" REFRIGERATOR DOOR LOCK

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EBERHARD MANUFACTURING CO.
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THE "THRIFT CARRIERS" FOR THE NATION

They're the outstanding trucks for 1937 . . . because they're modern to the minute . . . because they give "*more power per gallon, lower cost per load*". . . and because they're good for years of dependable service.

General Motors Installment Plan—monthly payments to suit your purse.
CHEVROLET MOTOR DIVISION, General Motors Sales Corporation, DETROIT, MICH.



Powerful beyond their price, modern to the minute, famous for economical transportation, Chevrolet trucks are carrying an ever-increasing volume of the daily shipments of truck users. They're the *thrift carriers for the nation* . . . giving many thousands of miles of safe, dependable service at minimum cost. Extra-rugged construction explains their dependability; Perfected Hydraulic Brakes, their safety; and a New High-Compression Valve-in-Head Engine, their ability to give *more power per gallon, lower cost per load*.

"MORE POWER per gallon LOWER COST per load !"

(CONTINUED FROM PAGE 62)
 them said increasing "the width of roads at hills to permit two lanes for the upgrade should be less difficult of accomplishment" than an ability factor.

The other said: "Personally I am convinced that the greatest safety factor that could be introduced would be the dual or double highways. I am as fully convinced that the car and truck manufacturers are just about 25 years ahead of the road programs in most states. I believe that these same manufacturers, publications, oil companies and the general public should insist

on a change in road building and maintenance."

THE man in charge of a large national petroleum fleet said "if turnouts were built into highways on long hills, the problem would be satisfactorily met and over a period of time would be the most economical way to meet the highway situation that has been created."

Another group of operators, classed with those opposing an ability factor, looked upon the slow-moving vehicle merely as "a nuisance."

"Accidents," said one of them, "are

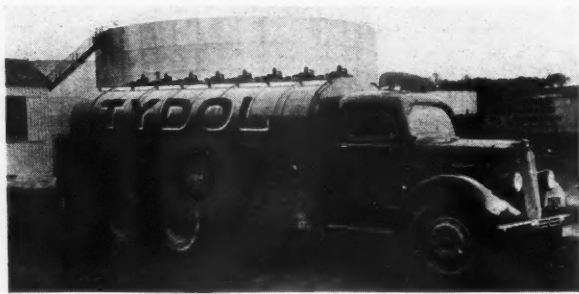
caused by impatient operators of high speed cars who do not take into consideration the proper factors which they are facing. The performance ability of some present-day passenger cars leads into difficulties on hills, not always when trucks are present."

Said another: "It is my belief, judging by my own reactions as a motorist, and my observation of other passenger-car drivers on the highway, that, with our modern cars capable of speeds of 30 to 50 miles on most hills, we will be no more content to follow 20-mile-an-hour trucks than we would to follow 5 or 10-mile-an-hour trucks. The 'urge to pass' will be there. It is easier, quicker, and therefore safer, to pass a 10-mile-an-hour truck on a hill (or elsewhere) than a 20-mile-an-hour truck."

That same thought was echoed independently by the official of a large utility fleet.

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INBUILT DEADWEIGHT REDUCES EARNINGS DAILY

WHEN you buy a truck you have purchased approximately 200,000 miles of trucking service.

If your truck is of a structural type carrying an inbuilt deadweight of parts not essential to strength, size of load, safety, speed, ease of driving, or economy of operation, you have started 200,000 miles of service under an operating tax that will be paid by daily loss of payload earnings or increased operating cost—probably both.

Consider, for example, the inbuilt deadweight of a Tractor-Trailer, as compared with a Six-Wheel Truck.

The Tractor-Trailer will weigh from 1/4 to 1 1/4 tons more than a Six-Wheel Truck of same capacity.

This is due to the burden imposed by fifth-wheel structure, landing gear and extra length.

What does it cost to haul even 1/4 ton of excess weight for 200,000 miles? How many Six-Wheelers will it buy?

And while you are at it, consider relative SAFETY, too. Insurance Companies charge 25% or more higher rates for Tractor-Trailers than for Six-Wheel Trucks—Why?

The oil industry and others, whose trucking operations are under close engineering supervision and check-up, are asking these questions—and putting more TRUCKTORGED SIX-WHEELERS on the road.



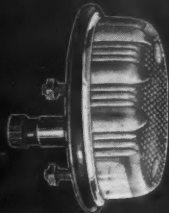
THE TRUCKTOR CORPORATION • 156 WILSON AVE., NEWARK, N. J.

FROM a highway department fleet came a contrary line of reasoning: "We have no interest in the ability of trucks to climb grades at reasonable rates of speed other than adding to the capacity of our highways. Trucks in our state are becoming a menace to lighter traffic. It is little credit to the average commercial driver that he is concerned in comparatively few accidents. The reason rests as much because of the fear of his vehicle by passenger car operators as any tribute to the commercial operator's skill. Many accidents are caused by slow-moving trucks, barely crawling up grades. Impatient operators behind cannot stand the snail pace, pull out around the truck and many times right into conflict with a vehicle coming the other way. We are setting maximum speeds on highways, particularly in our state where we have 'speed zones.' Well, we will soon arrive at minimum speeds on the open roads if present day highway mileage is going to take care of the increasing demand obvious during rush hours on peak days. Trucks on hills hold back traffic plenty today. Unless the industry regulates its minimum speed to a reasonable pace we believe authorities will do it for them."

The matter of adequate brakes was tersely expressed by one New England over-the-road carrier in this way: "Our over-the-road fleet of tractors and trailer can easily negotiate a 4 per cent grade at 20 m.p.h. with the 40,000 lb. gross weight to which we load them. Also our brakes can stop them. I am very positive in saying that I believe all vehicles which are in use should perform to above specifications as to power, and brakes should be such as (TURN TO PAGE 66, PLEASE)



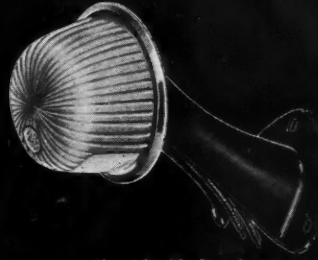
No. 150 Nu-Ray Stop and Tail Lamp for all Model A Fords. List price with bracket \$1.75



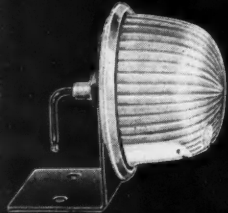
No. 156 Nu-Ray Stop and Tail Lamp for Chevrolet, 1925-30. List price \$1.60



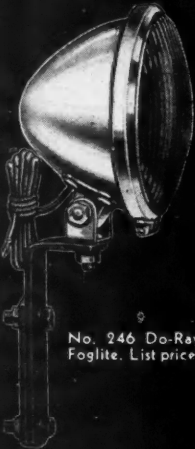
No. 149 Nu-Ray Universal Stop and Tail Lamp. List price \$1.50



No. 161 Nu-Ray Junior Stop and Tail Lamp for Model A Fords. List price \$1.20



No. 170 Nu-Ray Jr. One-Bolt Tail Lamp for trucks, buses, and trailers. List price 90c



No. 246 Do-Ray Junior Foglite. List price \$4.00



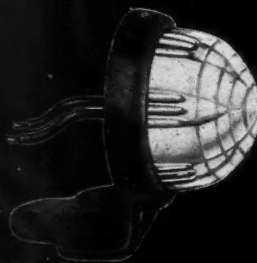
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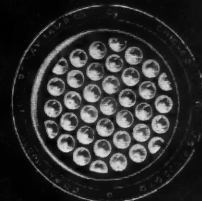
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No. 314 Do-Ray Bright Ray Foglite with malleable iron bracket. List price \$4.25



No. 1292 Do-Ray Nobby Calaphote Reflex Signal, 4-7 8" diameter. List price \$1.25



No. 1132 Do-Ray Improved 20" Three-Way Lite. List price \$1.50

(CONTINUED FROM PAGE 64)

to bring a fully loaded vehicle to a stop in 35 ft. (maximum) at 20 m.p.h. on a dry, level road, power to stop is fully as important as power to go."

Several operators seemed to express themselves gleefully over the prospect that an ability factor would compel broken-down, wheezy wrecks to seek a final resting place off the road.

THE constructive attitude of fleet operators in general was apparent in various comments.

"If we discontinue holding the Sun-

day sightseer back on the grades," said one, "he will eventually be our friend."

"I suggest," said another, "that before this discussion goes too far the industry agree on some uniform method of rating truck ability. Unless we can have a common yardstick it will be impossible to meet any arbitrary standards of performance. We also need to agree on the tractive resistance of the road surface. As matters now stand, the tentative S.A.E. formula gives the Ford and Chevrolet truck with semi-trailer as much performance as the C60 IHC. It is a fair statement to

say that these 1½-ton trucks can qualify under the S.A.E. rating for approximately 20,000 lb. gross on a 4 per cent grade at 20 m.p.h. To handle 40,000 lb. gross with C60 IHC would require an engine twice as large as their present 298-cu. in. engine. Where is the economy in that when the larger engine may be needed only 1 per cent of the total time."

"Generally speaking," said a Mid-West operator, "we believe this to be the most logical and practical solution of many of the present commercial hauling difficulties. In addition to minimum speed limits we feel that maximum speeds should also be enforced. In open country top speeds should be somewhat less than passenger car limits—probably 45-50 m.p.h. maximum—depending upon local conditions. This movement is so logical that it should have the support of all careful thinking transportation men."

"I personally feel," said an official of a large Atlantic Coast bakery concern, "that if a setup was made whereby cubic-inch displacement was tied in with gross weight the formula would be more workable and easier to enforce. For instance, 200-inch engines restricted to 20,000 gross, 400-in. to 40,000 gross, etc." (In other words 100 lb. of gross load per cubic-inch of engine displacement.)

"HERE is a place," said a very prominent operator, "where I believe the truck industry should pause to consider the problem as a whole and not pass hasty judgment on one phase of the situation. The time has been reached when the problem of motor truck operations on the highway should be looked at anew. Express highways throughout the country have been built and reserved primarily for passenger cars. The time has been reached when certain types and kinds of roads should be reserved, in some instances, and in others built expressly for motor truck operation. Considering the fact that motor truck operators pay enormous sums of money for taxes and are continually being legislated against in favor of passenger cars, special types of highways should be supplied for them. New thought should be given to this angle. We in America who pride ourselves upon being up to date and far ahead of the times do not even match a small country like Italy in the matter of suitable types and kinds of highways for motor truck operation."

And that's a good thought on which to close. Next month the opinions of another group of fleet operators will be presented. Meanwhile, if you have not already expressed your opinion, do so on the questionnaire on page 20.

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Ask your jobber to show you this new patented Edison Spark Plug. Or, better still, install a set as a test. See how these spark plugs reduce replacements and save maintenance cost all along the line. If your jobber doesn't stock Edison, write us at once and get this demonstration under way.

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Trigger Tricks

(CONTINUED FROM PAGE 23)

it wears off, determining the viscosity becomes second nature to the spray gunner.

For this trick you need a viscosity cup, a thermometer, graduate and stop watch. All this equipment comes as a unit and is reasonable in price. In using the viscosity cup to determine the consistency of the paint it must be kept in mind that the viscosimeter (the stand for the whole unit) must be leveled each time the viscosity is taken. With the

equipment in position and the viscosimeter leveled, the cleaning cup and sample cup are filled. The cup must be covered in order to avoid evaporation of the thinner. The orifice of the cup is closed by locking the release or by using the finger. As air bubbles rise to the top of the cup they are gently brushed off with a metal strip used horizontally. Then more of the paint sample is poured into the cup and allowed to overflow. If there are large bubbles in the cup, burst them gently with the dry lead of a pencil. When the overflowing is stopped, press button of the watch stem and allow the liquid to flow



The Viscosimeter provides the most accurate means for determining consistency. This one was made by Scientific Instrument Co., 533 W. Larned St., Detroit.

through the orifice simultaneously with the starting of the watch. Note the time at the first evidence of a break in the stream through the orifice. Hold a thermometer about half an inch below the orifice while making the test and note the temperature. This must be considered the temperature of the sample whose viscosity is being tested and must be within .2 deg. Fahr. of the standard which is 80 degrees. The time it takes the paint to flow through the orifice determines the viscosity and once that is known, the proper amount of thinner to use may be determined.

If you don't want to use this piece of equipment, then the next best bet is to have the paint man tell you how to reduce the materials you use. That is to say, the paint man will tell you exactly how much thinner to use by volume for every job and every type of paint at a given temperature. If his directions are followed, viscosity is taken care of and you don't have to worry about your gun work thereafter. But if you leave your paint standing around, the thinner evaporates, the paint becomes thick and its viscosity is "shot" and must be determined over again.

With the viscosity determined, we come to the second important trigger trick:

2. The Adjustment Trick

PROPER spray gun adjustment is all-important. As stated before, we want the correct proportion of air and paint. For this purpose we must use the right size air cap, fluid tip and air pressure. Of course, each type of material will have its own specified air pressure for best atomization and width of spray.

(TURN TO PAGE 70, PLEASE)

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SEPTEMBER, 1937

HOLD EVERYTHING!

BALDWIN AUTO PARTS CO.
Quality and Service
232 GIBSON STREET
DETROIT
July 30, 1937

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While some of your competitors may be following your steps to some extent, we do not feel that they have gone into it as thoroughly as your company.

Your cooperation with us from every point has been greatly appreciated and we only hope that your company will continue to show its interest in the various jobbers problems the same as they have in the past.

We feel that if the possibilities mentioned above are followed they will bear fruit to the extent that the better class of jobbers throughout the country will storm your door for your franchise.

Knowing your success in the past we trust that same will continue. With best personal regards from both A. W. and the writer, we remain,

Very truly yours,
BALDWIN AUTO PARTS CO.
A. B. Merrill



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Ask your  jobber or write for material recommendations and complete information for your requirements.

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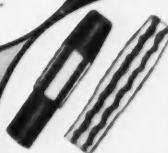
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Build these parts into the unit that has your toughest run. It will write its own amazing story of uninterrupted service and reduced maintenance costs.

Thompson Products

(CONTINUED FROM PAGE 68)

The air pressure, for instance, may vary from 25 lb. to 80 lb. However, the manufacturer specifies the correct pressure for his product so the trigger man is relieved of this problem. However, if there is any doubt, start with a pressure of 50 to 60 lb. (This means pressure at the gun as air pressure has a tendency to drop between the compressor and gun depending on the length of the hose being used.) Make a test spray and if the sample shows large dots in the overspray, you have insufficient atomization and should increase the air pressure. If

the atomization seems excessive reduce the pressure until you obtain the smallest possible dots in the overspray.

At the time of adjusting for air pressure, adjust the gun for fluid flow and spray width. The fluid adjusting screw turned to right or left will cause a corresponding increase or reduction in flow. Turning the spreader adjustment to right or left will increase or reduce the amount of air passing through the air cap and consequently produce a wide or narrow spray pattern. Variation of spray pattern from round to extremely wide is possible through use of this

valve. If it is set for a spray that is too wide for the material being used, a split spray will result. This is a spray pattern with a thin center and heavy ends. When this occurs, reduce the pattern width until a spray of uniform density is obtained. When in doubt, start with the spreader adjustment about two-thirds closed and from this setting an adjustment can be made that will produce satisfactory results.

With the air pressure set and the correct adjustments for complete atomization determined, it is necessary to pull another trick even before the paint begins to flow:

3. Gun Position Trick

YOU can no more do a good spray job by careless aiming of the gun than you can hit the side of a wall with your gun pointing in the air. Yet too many G-Men of the paint shops hold their guns in everyone but the correct position. There is only one correct position for the gun and you don't have to be a crack sharpshooter to maintain it. Correct position for the gun is at right angles to the surface. In other words, straight in front of you, not slanted. This gun position must be maintained at all times no matter whether working on flat surfaces or curved. The distance of the gun from the surface should be between 8 and 10 in. at all points of the stroke. Whatever the distance is, it should be maintained throughout, or the thickness of the paint film on the surface will vary from thin when the gun is away to thick when the nozzle is brought up close. The stroke itself should be no wider than is convenient for the operator to hold the gun at right angles to the surface.

Of primary importance in obtaining uniform results is the trigger manipulation. The secret is to aim, pull and release at the right time. Trigger manipulation may be described as starting the stroke, pulling the trigger, releasing the trigger and following through with the stroke. This operation prevents the application of excessive material at the beginning and end of the stroke and actually feathers the ends of the stroke for the following overlap. This little trick is well worth noting and mastering.

However, all is still not pie for the operator. A trick yet to be mastered is the pattern itself. There is the fan spray, the cone spray, the mist spray, etc., which brings us to the next trick:

4. The Pattern Trick

WHEN a finish is sprayed on a surface, the gun makes a pattern. This varies in shape and width in accordance with the preference of the operator, the

(TURN TO PAGE 72, PLEASE)

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EVERY SIZE AND TYPE

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SHORT W. B. UNITS



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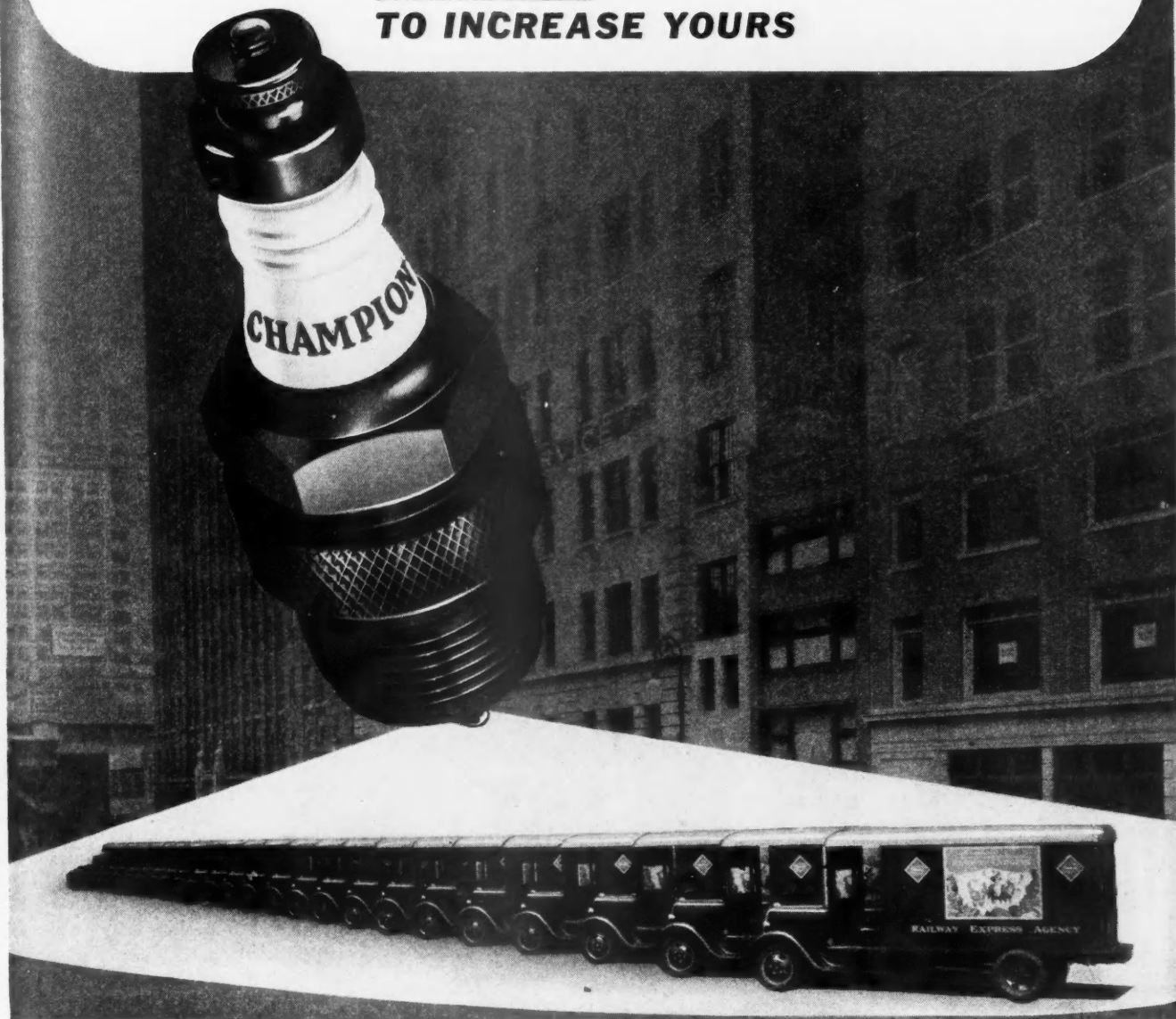
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CHECK AND CLEAN SPARK PLUGS WHEN YOU CHANGE OIL

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(CONTINUED FROM PAGE 70)

material used and the nature of the work. The pattern most recommended and one that is generally used by automobile finishers is elliptical in shape. When the gun is working perfectly the application is of uniform thickness from the center to the ends of the ellipse.

The symmetry of this pattern and the uniformity of the application are determined by the spray-head which contains the nozzles through which the air and liquid pass, forming the spray. The slightest variation in air pressure or flow will change the shape of the spray.

Sometimes wear or imperfect alignment of all parts will change the shape of the spray, affect the uniformity of the application, cause split sprays, overspray, spattering and produce effects which not only slow up the work but which must be removed by hours of hard labor.

The fan of the spray should cover a solid wet coat of 4 to 6 in. if the gun is operating properly and the finishing material is properly reduced. A quick pull of the trigger should produce a perfect elliptical shape. If streaking results, something is wrong with the ad-

justment. The throw of the trigger is controlled by the setting of the fluid adjustment. With fluid adjustment correct, trigger may be pulled completely.

Although the fan or elliptical pattern is the ideal shape, sometimes the cone spray is desirable, especially when working on a small area. To produce the cone spray it is simply necessary to reduce the width of the fan spray and this can be done without changing the density of the film.

The mist spray, frequently used in the second undercoat or as a third finish coat is simply the result of closing the fluid flow and opening the air cap. However, when using a mist spray, careful adjustment is necessary so that there is not too much air and too little paint. This is a ticklish trick and should be practised carefully.

A simple adjustment of the air cap will produce a vertical or horizontal spray and is accomplished by turning the nozzle and moving the air cap vent holes either horizontally or vertically.

OF course, mastering these four tricks alone, will not serve to beautify a truck. There are other essential points to brush up on. The room temperature must be correct—within reasonable limits—which means between 75 and 90 degrees. The compressor (when using pressure feed) must be capable of producing at least 8 cu. ft. of air per minute—not spasmodically but in continued use. The spray gun should be capable of handling at least 6 to 8 cu. ft. of air per minute. There must be sufficient volume of air to provide a working pressure at the gun up to 80 lb., and the material should reach the gun at a temperature not lower than 70 degrees after the viscosity and amount of thinner has been determined.

The method of spraying is important. The object is to apply a coat as wet as possible without getting sags and to apply the material in such a manner as to create a minimum of dust from overspray. The operator should move over the work smoothly and quickly, preferably in vertical strokes—top to bottom. About one-third of the width of the stroke should be overlapped and the gun must always be held at right angles, not tipped, as already explained. The wrist should never be bent or the gun whipped left to right or up and down.

Carrier Act Gains Recognition

Twenty-six states have already adopted in whole or part the ICC's Motor Carrier Safety Regulations for common and contract carriers, first promulgated on Dec. 23, 1936. All of the states, including the District of Columbia, have recognized the provisions. It is considered an important step toward nation-wide uniformity in safety rules for highway traffic.

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SEPTEMBER, 1937



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2-Speed Axle

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Below: Heil Straddle-Mount telescopic hoist mounted on a six-wheel chassis. Note following features: Ample ground clearance — low mounting height (14 inches) — high dumping angle (50 to 60°). The hoist cylinders are supported by a heavy-duty, reinforced frame which rests on the chassis.



Will Regulations Smother Small Operators?

(CONTINUED FROM PAGE 26)

the desire of the Commission to see to it that the country is furnished with a dependable motor transportation system, and under the surface also is the necessity for whipping motor carrier units into larger groups so that they may be more economically and more efficiently supervised by the Commission.

It is reliably reported that there are some 50,000 cases now pending in the

Motor Carrier Division of the I.C.C. upon which decisions of some sort must eventually be rendered, and that under present procedure hearings could be assigned to every one of these cases. It is said also that new applications are arriving at the offices of the Bureau at the rate of about 400 per month.

Not only is it a physical impossibility for the Commission and examiners to conduct hearings on such an overwhelming avalanche of more or less controversial matters, but it is also a physical impossibility for the Commission to supervise the vast number of individual carriers now clamoring at its doors for

permits. It is said that upwards of 100,000 cases have been presented to the Commission since the enactment of the Motor Carrier Law. Many of these have been thrown out without the necessity for extended consideration, but the number remaining represents, perhaps, twice as many cases as have been decided by the Commission since its organization more than 50 years ago.

It is easy to see why the Commission will dispose of most of the present cases through the conference method. Doubtless it will become necessary merely to send out an investigator who will be authorized under established policies to recommend disposition of many of these cases on the spot. Even so, the conduct of hundreds of hearings, of thousands of conferences, and more thousands of investigations on matters of vital importance to members of the industry is a task which many believe to be far beyond the physical capacities of the present staff of the Commission or of any enlarged staff which Congress is likely to authorize. As to how these cases will be handled and what devices will be resorted to in order to expedite them, there is much speculation both within the Commission and among members of the Commission's Bar widely scattered throughout the country. Trends may, perhaps, be best observed through an examination of present decisions now issuing daily from Commission offices.

IN examining the reports of the Commission, particularly for trends, both the decisions of the Commission and the recommendations made by examiners are pertinent. Although an examiner's recommendation purports to represent his individual conclusions after hearing the testimony or participating in the conferences, these reports at the time they are issued actually reflect the policies under consideration for adoption by the Bureau. The signed recommendations of an individual examiner are placed before a reviewing board in Washington before the recommendation is released, and if it does not already do so, it is made to conform to the then established policies. Later it undergoes review by the Commission, whose decision finally renders it effective. In the main, however, the policies formulated by the Bureau find their way into Commission's decisions.

Bearing in mind what has been said concerning the enormous volume of pending cases, it is interesting to note the tendency both in examiners' recommendations and in the Commission's decisions to restrict or eliminate the smaller operators. In determining rights under the grandfather clause

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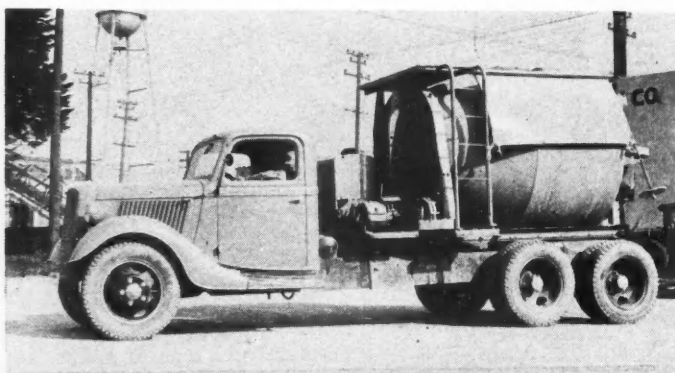
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(CONTINUED FROM PAGE 74)

the trend is to restrict operators to certain commodities, thus making it more difficult for the smaller operation. The trend also is to define, in so far as it is possible to do so, the exact routes over which both regular and irregular carriers may operate. Although both Commission and examiners base their conclusions, which may tend to restrict the smaller operator, on the facts presented in connection with the applications, it is very likely that the great task of policing and otherwise supervising the thousands of individual carriers influences the Commission toward

concentrating all motor carrier operation into the larger units.

A REPORT and order recommended in MC 86102, a Common Carrier Application filed by Lawrence Bingham of Akron, Ohio, by Examiner Allan F. Borroughs, for many years prior to the organization of the Motor Carrier Bureau a prominent member of the Commission's legal staff, is illustrative of this trend. The application filed by Mr. Bingham asked for authorization of a common carrier operation over various irregular routes in eastern and southern states. With competition doubtless

making it difficult for this applicant to operate his 3-ton, tractor-drawn, trailer-truck on a wholly independent basis, Mr. Bingham allied his operation with Midwest Haulers, Inc., and occasionally with other similar carriers employing owner-drivers. The Midwest company apparently operates its business through the employment of several hundred of such drivers who serve it on either an all or part-time basis. Declaring that "the status of these operators as well as of thousands of others throughout the country has not been determined by the Commission," Examiner Borroughs proceeds to a consideration of various administrative rulings previously issued by the Bureau and to the language of Section 203 (a) of the Act to justify his position that although Mr. Bingham's truck was in no sense leased to the Midwest Haulers, Inc., and admittedly was on occasion hauling for other similar carriers, that nonetheless "it was controlled under an arrangement similar to a lease," such as is described in the Act, and under which he holds that the applicant is not a common carrier and not entitled to a certificate. These conclusions are based on the theory "that possession and control of the equipment during the period it was employed in transporting for the Midwest Haulers, Inc., was vested in that company," holding that such possession was "good against all the world during such transportation." Overlooked in the decision is the very pertinent fact that the truck was used by the applicant whenever he so desired to haul for others, temporary tags and temporary signs containing the Midwest name being hooked to the truck while it was in Midwest service.

This decision, if adopted by the Commission, will force this small carrier to thereafter permanently align himself with one of the larger units and checks him out in so far as the particular operation is concerned as a carrier with any kind of independent status.

A report and order recommended by Examiner A. E. Later in Investigation and Suspension Docket No. M-10, Insurance Allowances, is interesting both because it indicates the trend mentioned and because it will eventually determine the rule as to whether or not shippers may carry and deduct out-of-pocket costs of cargo insurance from gross transportation charges. At the hearing the scope of the investigation, originally limited to the legality of the rules, was enlarged, by agreement, to include the general question involved in insurance allowances to shippers.

THE vogue of shippers' insurance to replace insurance furnished by the carrier has grown up as a result of the
(TURN TO PAGE 78, PLEASE)



"The ALL STEEL"
ANSWER
TO
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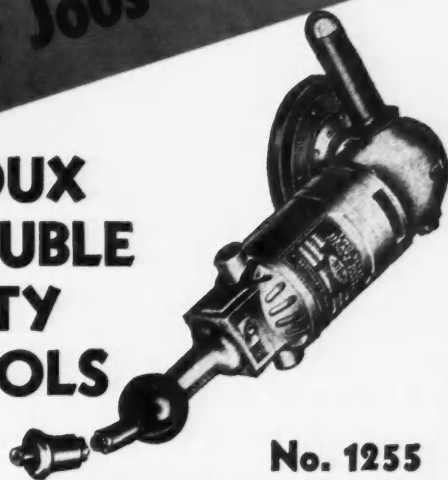
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No. 1330 Complete with cord, air hose, 1 jar Cold Tinning Compound, Applicator, Reviver for Compound, Clean Out Tool and 5 lbs. Metal Alloy. Standard voltage 110; also furnished for 220-230, 240. Specify voltage—A.C. or D.C.

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STANDARD THE WORLD OVER



(CONTINUED FROM PAGE 76)

lack of financial responsibility of the smaller truckers. Truckers' capital has been, and to a large extent is still, absorbed in the investment of equipment, which constitutes the truckers' principal physical property. Much of this equipment, particularly in the case of the small trucker, is purchased on the installment plan. Obviously, damages against such truckers cannot be recovered and the carrying of adequate cargo insurance constitutes a vexing and frequently an impossible problem. Before the advent of shippers' insurance the trucking of such products as fresh

meats was more or less restricted to points served by the larger and more responsible truckers. Such policies of insurance as the small truckers were able to secure contained so many exclusion clauses as to render them worthless. There was ordinarily no coverage for spoilage during warm weather, faulty loading of trucks, rough roads, and a score or more of other hazards.

Shippers found that by taking out blanket policies themselves they could employ fleets of privately owned trucks operating more or less under rules laid down by them, and come through the transaction about as satisfactorily as

where the larger concerns were exclusively patronized, reaching points not touched by the large operators. Thus the shipper was adequately protected without reference to the responsibility of the trucker. The insurance was under the control of the trucker to the extent that the latter might decide whether or not to allow the shipper to carry insurance and deduct it from the rate or furnish it himself. In other words, the carrier could take advantage of the shippers' insurance, if proved more economical, or reject it otherwise.

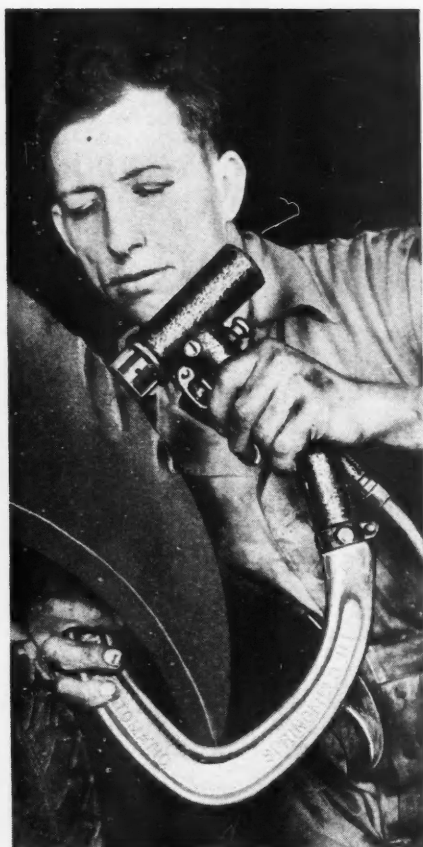
Examiner Later sets out at length the advantages to the shipper and to the small trucker in permitting deductions of the cost of shippers' insurance, stating that it enabled a single company to employ several hundred individually operated trucks which otherwise could not have been utilized. Holding finally that these advantages are such as to enable the shipper employing them to have a decided advantage over shippers who may not be able to procure such insurance and who must depend upon the carriers' responsibility for his insurance, he decides that such advantages constitute unjust discrimination and concludes that it is unlawful to permit shippers to carry cargo insurance and deduct the costs from gross charges.

So uncertain were some of the participants in the hearing, particularly those representing State Commissions, that the Examiner was unable to determine whether they supported or opposed this form of cargo insurance allowances. Although the proposed allowances were supported by both shippers and truckers, the Examiner holds that the requirements of Section 215 of the Act, which require motor carriers to provide cargo insurance for the protection of shippers and compels them to file with the Commission the required minimum insurance, must be strictly complied with and that the furnishing of cargo insurance by the carrier to the shipper not being a service required by law to be furnished by the carrier, may not constitute the basis for any allowances to be received by the shipper from the carriers' charges. He suggests as a solution of the problem that cargo insurance be carried by the carriers on the basis of an established release value and that any additional coverage be carried by the shippers at their own expense.

Examiner Later goes to considerable length in discussing the advantages of shippers' cargo insurance, even going into the actuarial economics of such insurance and its effect on the general rate structure due to the grouping of insurance charges on certain large operations. The effect of the decision.

(TURN TO PAGE 80, PLEASE)

..... You can handle your own body and fender straightening work



with the new

WEAVER PNEUMATIC HAMMER

Saves Hours of Hand Hammering

Light Weight—only 12 lbs.

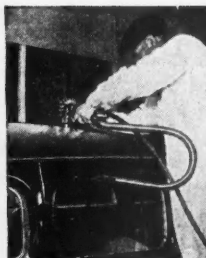
Has Die Compensator and Adjusting Screw for thickness of metal . . .

THE Weaver Pneumatic Hammer belongs in the shop of every fleet operator. This handy hammer fits over steel tops, bodies, doors, skirted fenders. It is light, compact, easy to handle, and only weighs 12 lbs. This is the only hammer on the market that maintains tension automatically with air pressure in proportion to speed and power of blows.

Extremely simple construction—no valves, no springs, no cup leathers—only one moving part.

Five dies furnished with DeLuxe Model WH-30 to handle every job. Skirted Fender Arm included—fits over streamlined fenders and into hard-to-reach places. Special arm for Turret Tops sold extra.

Model WH-30 . . . Price, with 2 arms, 5 dies, hose, etc. . . . \$75.00 (West Coast \$78.00).



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COMMERCIAL CAR JOURNAL
SEPTEMBER, 1937

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When a blinding mist or a "pea soup" fog settles down over the highway, and the driver can't see three feet ahead of him—that's when a truck or bus needs Guide Fog Lamps. They eliminate loss in time and money due to enforced lay-overs; they protect driver, cargo and passengers from costly accidents, by throwing a powerful amber beam through fog, rain and sleet. A special lens and

bulb cap prevent "stray" light from reflecting back into the driver's eyes. You'll find, too, that Guide Fog Lamps are not only built right for safety, but they are priced right for economy. It will pay you to install them now, so that when they are needed, they'll be on the job. Order from your nearest United Motors Service Branch or Authorized Service Station.



Guide

LAMP DIVISION

GENERAL MOTORS CORPORATION • ANDERSON, INDIANA



(CONTINUED FROM PAGE 78)
however, if it is approved by the Commission, will be to greatly disturb thousands of small operators and force more business into the hands of larger and financially more responsible operators.

UNFORTUNATELY the scope of this article does not permit a further analysis of the numerous decisions now issuing from the Bureau. Regardless of either legislation or Commission's decisions, it is inevitable that the trucking industry will gravitate toward operation by larger and still larger units. While

there are now, and probably will continue for a long time to be many particular operations which are adequately taken care of by owners of from one to a dozen units, the larger tonnage will go to the fleet operators. These in turn through consolidations and affiliations will tend more and more toward the formation of larger units with higher financial responsibility.

In the meantime, the rights of the small operator should not be overlooked either by the Commission or legislators. For the small operator of today may well become the large operator of tomorrow.

After Hours

(CONTINUED FROM PAGE 32)

5 per cent grades today the slow-moving vehicle is just as likely to be a heavy-duty job as a light-duty one.

Actually, the abuse to which all types of trucks are subjected is more likely to prove destructive to the vehicle of lighter construction. Therefore, it is just as logical to suspect the so-called light-duty makers of wishing to protect their products by the imposition of an ability factor which would curb overloading and consequent abuse.

Source of "Pressure"

The truth is that no truck manufacturing group is responsible for the current talk about ability factors. The pressure, if it can be called that, is coming from governmental sources. Millions are being spent on highway planning surveys to make for greater capacity, less congestion and safer travel on our present highways. Governmental agencies are aware that these desirable objectives can be realized in several ways, but the question of cost is a vital consideration. Unquestionably the future will see many two-lane, one-way highways constructed. But congestion and safety are problems of the present, and since safer roads, even if economically feasible, cannot be financed and constructed overnight, the problem of speeding up traffic to relieve congestion, increase capacity and provide safer travel on hills remains. It is not strange that a solution should suggest itself in the form of an ability factor compelling trucks to maintain a certain speed on a certain grade.

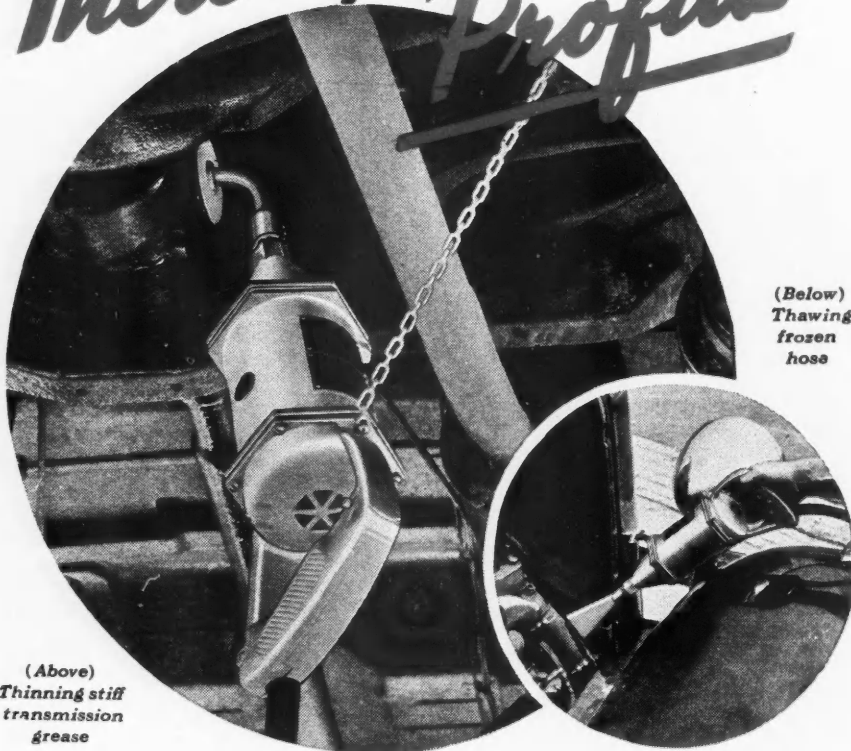
Equally natural is the fact that in their approach to the problem the governmental agencies should consult with truck manufacturers. There has been such consultation but no commitment.

Makers Are Divided

Equally natural is COMMERCIAL CAR JOURNAL's editorial activity in regard to ability factors as reflected in the last few issues. This activity was entirely spontaneous and is directed simply at recording the frank views of all elements within the truck industry. As a publication, COMMERCIAL CAR JOURNAL so far has not taken a stand on the subject. It will after other elements have been permitted to have their say.

Meanwhile, to allay suspicions that are an injustice to manufacturers of heavy-duty trucks, let it be said that correspondence with factory engineers shows this group to be divided not only on the form and advisability of an ability factor but also on the possibility of enforcing such a factor.

WINTER Lubrication
Increase Profits



(Above)
Thinning stiff
transmission
grease

(Below)
Thawing
frozen
hose

WITH THE VAN DORN ELECTRIC HEAT GUN

YOU sell up to a pound more grease every time you drain a transmission or "rear end" in cold weather with the Van Dorn Heat Gun. The Heat Gun throws a concentrated blast of hot air into the housings, thinning the lubricant so you can drain out every last bit. It also saves time on countless other jobs—thawing water-pumps, hose connections, radiators,

ice on windshields—drying ignition systems—quick-drying touch-up paint jobs. Equipped with six handy attachments which snap on and off instantly. 1,000-watt element, delivers 450°F. Ask your Jobber for a demonstration—or write for complete data. The Van Dorn Electric Tool Co., 732 Joppa Road, Towson, Maryland. (Div. of The Black & Decker Mfg. Co.)

NEW **"Van Dorn"**
HEAT GUN

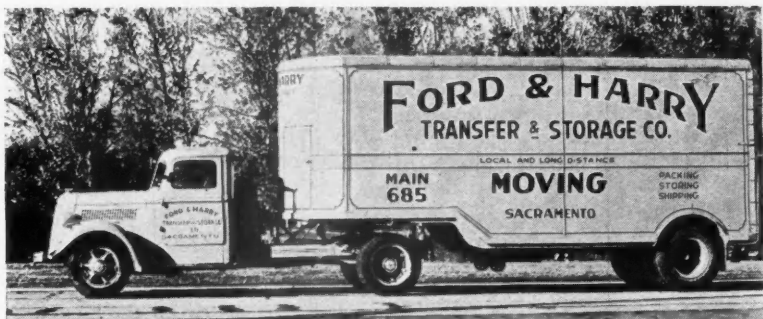


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SEPTEMBER, 1937

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Money Savers — Continued

108E Read, on page 108, about the car manufacturers who specify P. O. B. "PERFECT SEAL" Gasket Paste as original equipment built in at the factory. Check post card for details.

108F With the DETROIT Compensating Axle you get an automatic camber for semi and trailer axles—insuring longer tire life and marked fuel savings. See page 108, and check post card for details.

109A Select STERLING Motor Trucks for dependable, economical service. See page 109. Check post card for additional information.

109B UNITED AMERICAN BOSCH Volt-O-Matic Generator shoulders the battery's burden. See page 109. Check post card for book that tells how.

109C Replace with DUPLATE Safety Glass, backed by half a century of glass making. See page 109. Check post card for details.

109D Nationally known fleets drastically cut oil and gas bills with K & S Motor Products' OILDEX and FILTLEX. See page 109. Check post card for prices, sizes, etc.

109E When you buy THORNTON Four Rear Wheel Drives you make big savings on first cost, operating cost, and upkeep. See page 109, and check post card for further details.

110A MAGNUS Chemical Co., page 110, offers you a FREE copy of "Automotive Cleaning Handbook." Check post card for yours.

110B The hose clam with the thumb screw is shown on page 110. It's NOC-OUT, standard clam of the industry. When writing for information don't forget to check the post card.

110C For running-in and rebuilt engines—"dag" Brand colloidal graphite. See Acheson Colloids Corp., page 110. Check post card for details.

110D There's the Truck you want in the FWD line; sizes range in capacities from 1½ to 15 tons. See page 110, and check post card for further details.

110E Only 4 HY-POWER dual clearance and side marker lamps are required in place of 8. See AMERICAN AUTOMATIC DEVICES CO., page 110. Check post card for further details.

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110H Skid damages can put big dents in fleet pocketbooks; avoid them with the ROLL-ABOUT Groover. See page 110, and check post card for further details.

111A KINNEAR Truck Doors, which roll up like a window-shade, are never in the way. See page 111. Check the post card for further information.

111B Whether you want a 1½-ton Truck or a 10-ton Truck, or something in between, there's an OSHKOSH 4 Wheel Drive Truck to fill the bill. See page 111, and check the post card for details.

111C Choose trucks equipped with FULLER Truck Transmissions and you'll have easy shifting, quiet operation, hauling power, and dependability. See page 111, and check the post card.

111D Check post card for further information concerning SEALED POWER Piston Rings. Described on page 111 as "Best in Old Cars—Best in New Cars."

111E There's a ST. PAUL Hydraulic Hoist and Body for every model of truck. See page 111, and check post card for details.

111F To eliminate the danger of "peep-hole" vision in your fleet, install ALLIANCE Powr-Pakt Windshield Defrosters for winter work. See page 111, and check post card for details.

112A First cost is the final cost on SPONGEX Seat Cushions. See Sponge Rubber Products Co., page 112. Check post card for details.

112B Read, on page 112, about the peak capacities, minimum expense, and years of endurance which distinguish DAYTON Air Compressors. Check post card for details.

112C HUG Trucks are built for tough going—to your own requirements to do a hard job faster and more economically. Read about them on page 112, and check post card for details.

112D The world's largest operators of commercial vehicles use JONES PORTABLE TACHOMETERS to check engine speeds, for tune-ups, and for seating governors. A recommendation like that means you ought to know more about them. Read the ad on page 112, then get more information from us via the post card.

112E It's good economy to buy EDWARDS Quality Semi-Trailers. See page 112, and check post card for information.

113A There are 31 years of experience behind FITZGERALD BULLDOG GASKETS—gaskets that insure tight, leak-proof joints. See page 113. Check post card for full details.

113B TRU-STOP Emergency Brakes stop wrecks. They meet today's traffic requirements. See page 113. Check post card for additional safety facts.

115A The K-D Lamp Co., page 115, offers you Safety Lighting—reflectors and lamps. Check post card for new I. C. C. Chart.

115B FRINK "V" Type Sno-Plows have strength to move deep drifts. Quickly attached and detached, leaving trucks free for other purposes. See page 115. Check post card for literature.

115C "It's Radiator-cleaning time now." SANI-FLUSH is the economical, convenient and efficient way to do it. See page 115, and check post card for details.

115D SAYLOR-BEALL production gun equipment is ideal for spraying synthetics. See page 115. Check post card for complete description and prices.

116 Are you familiar with YANKEE Lighting Equipment to meet those I. C. C. requirements? Turn to page 116, and check post card for details.

117A If you're replacing universal joints, you need BLOOD BROTHERS Universal Joints. See page 117, and check post card for more information.

117B Change from one fuel tank to the other without dangerous stops on the road. IMPERIAL BRASS, see page 117, has a new 4-way Hi-Duty Shut-off Cock that does the trick. Check post card for additional information.

119 LONG engineers continue to develop and refine Long clutches to meet modern requirements. See page 119. Check post card for complete information.

120 Salisbury Axles (SPICER MFG. CO.) have the required increase in capacity for light duty commercial vehicles. They are simple in design, rugged, and low in cost. See page 120. Check post card for details.

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Try it on your own job. Learn all its many outstanding features found in no other welder and you'll understand why Hobart Simplified Arc Welder is the latest selling arc welder on the market today. Hobart Brothers, Box CJ-97, Troy, O.

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- SUPPORTS HOSE
- SEALS FROM DIRT

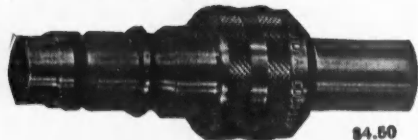
• Fits all standard type couplings. . . . Protects male coupling from damage which destroys brake efficiency.

\$1.25 LIST PRICE

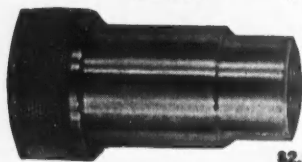


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Connected . . . Autovac is fully open! Disconnected . . . Autovac is tightly closed! No valve to turn off . . . nothing left to chance. Saves time and money. Autovac protects hose lines and mechanism from water and dirt . . . It's automatically sealed when not in use. Furnished in 3 sizes $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ inch. MALE \$4.50. FEMALE \$2.80.



\$4.50



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EVANS VENTILATING AND HEATING SYSTEMS

**Are Better Engineered
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EVANS PRODUCTS COMPANY
UNION GUARDIAN BLDG.
DETROIT, MICHIGAN

Shop Hints

(CONTINUED FROM PAGE 29)

piece of pipe is $9\frac{1}{2}$ in. long if front spring work is to be done and if rear spring work is to be done this piece of pipe is substituted by a piece of pipe $19\frac{1}{2}$ in. long.

By Technical Sgt. H. E. BAKER

Co. C 55 Q.M. Regt.
Fort Benning, Ga.

7. Paint Remover

I HAVE never seen a shop hint on painting in *COMMERCIAL CAR JOURNAL*, but nevertheless I am submitting the following formula for a paint remover which works very well for us.

- 2 gal. benzol
- 2 gal. alcohol
- 1 qt. ammonia
- 1 lb. paraffine wax

Mix the benzol and alcohol together and then add ammonia standing well away from the mixture. If the remover is needed immediately melt the wax and add. If not shave the wax and let it stand overnight. Apply as any other remover and allow to stand 15 to 30 minutes before scraping off.

Get a Load of Loads

(CONTINUED FROM PAGE 52)

dead whale is worthy of recount.

After a transcontinental tour, a forty-two foot captive whale reached New York in a 72-foot exhibition car. The whale died while in New York and after drums of formaldehyde were injected into its carcass to preserve it, it was found that the 72-foot exhibition car, which had been expected to cart the whale to Coney Island, a distance of about three miles from its resting place, was too long to round the railway curves.

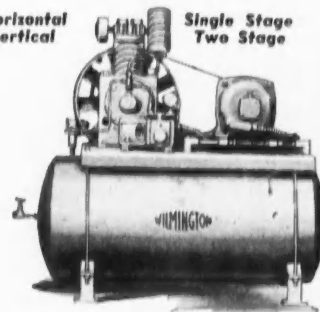
Two trucks and trailers, facing in opposite directions, were supplied by Gerosa. These trucks and trailers sup-

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Single Stage
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The experience gained in thirty four years' continuous service to the automotive industry is back of the absolute dependability of Wilmington Compressors. With this dependability, you get long service at a ridiculously low maintenance cost. Features contributing to Wilmington durability and efficiency are: a long lasting non-pulsating check valve, an unloader which protects the motor from starting overloads; Timken bearings. Send for catalog today!

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TURN SIGNALS

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**SIMPLE IN OPERATION
EASY TO INSTALL
NO MAINTENANCE PROBLEMS**

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Pin Hole Honing is Cheaper and Better than Reaming

• Never a dull tool or blade marked hole; small investment, nothing to sharpen; no guess-work or inaccurate fits. Low cost replacement Abrasives; Micrometer Adjustment. Makes ANY mechanic an expert pin fitter. Ask your Jobber today for Standard or Heavy Duty Pin Hone Set you need.

3-TOOL SET
\$24.00

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PISTON PIN HONE**

NEW ALCO 4-WHEEL DRIVE

For Ford and Chevrolet trucks offers revolutionary performance features never before found—a light, fast all-wheel-drive that piles up profits for the hauler on hard runs.

For information Write or Wire

ALMA MOTOR COMPANY
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Unconditionally
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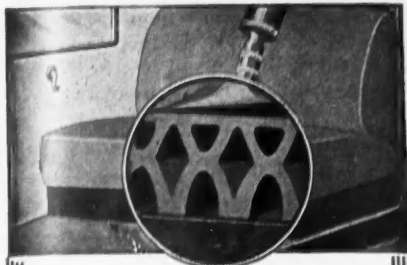
MUFFLERS
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LEAK-PROOF
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UNIVERSAL PARTS, INC. CHICAGO

The All-Rubber SEAT CUSHION THAT HAS NO EQUAL



Black Diamond all-rubber seat cushions and back rests will pile up worth-while savings for operators of every type of truck. They're seat cushions that will double, triple even quadruple the best wearing qualities you've ever known. A specially processed semi-sponge rubber combined with improved exclusive diamond grid construction guarantees unexcelled riding qualities and banishes all upkeep expense. Many other outstanding features. Made in every size and shape to fit any cab or seat. Get facts direct from us.

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Eliminate Vibration With the

OHIO FLEXON Clutch Plate



Will correct such clutch troubles as clashing gears, jerky starting, vibration and clutch chattering. Flexible center and cushioned surfaces insure smooth clutch performance.

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Wagner Electric Corporation
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McCORD REFRIGERATION —FUEL SYSTEM FOR TRUCKS REFRIGERATION AT NO COST —BY THE FUEL THAT RUNS THE MOTOR

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McCORD RADIATOR AND MFG. CO.
DETROIT

DISTRIBUTOR WANTED

Superior Trailers will make money for you. They are honestly built and competitively priced. Nationally financed through C. I. T. No factory competition. A few protected territories open to established truck distributors. Write to Superior Trailer Corp., Indianapolis, Ind.

SUPERIOR TRAILERS

ported two ends of the 72-foot car. Starting at midnight, the queer caravan negotiated crooked, narrow streets, one truck pulling, the other truck, with dead engine, rolling backward, its chauffeur steering around curves like a fireman at the rear of a hook and ladder. By dawn, Coney Island was reached and the dead whale delivered.

The story of the live torpedo transported through crowded New York streets would excite the imagination of a pulpiter and send him off into a flurry of weird denouements. With Gerosa on the job nothing happened.

The live torpedo was built by a New York inventor and was to be controlled in water by radio waves. The inventor succeeded in interesting United States Navy officials in his device, and an appointment was made for a trial test off Sandy Hook. The inventor, living in the Bronx, was faced with the task of getting a deadly engine safely through the worst traffic center in the world.

Gerosa simply built a special cradle on one of the trucks. The truck was backed up against the inventor's door and the torpedo, 28 feet long, was lifted onto the cradle. Hours later it was at its destination, sliding off the cradle and into the water as desired.

SUCH items as 45-ton electric generators, 40-ton turbine shafts, steam shovels and cranes are common loads for Gerosa. Likewise are lunch wagons, houses with the steam piping intact and similar bulky objects of any kind. The completion of a column in Pelham Bay Park in New York, 50 feet in length, and the necessity of raising a statue to the top of this column, found the firm prepared. The statue was lifted by a 110-foot steel boom which was run by a crawler-type tractor. Previous to this, Gerosa had carted the statue from Providence, R. I., while the boom, close to half a block long, rode 7 miles through New York traffic to reach the column.

The beautiful, pink, Georgia marble statues of the recently constructed Bronx County Court House, were carted (TURN TO NEXT PAGE, PLEASE)

TRUXMORE

The Perfected 3rd Axle

In Combination with Any Type or Size Truck You Are Accustomed to Using Makes the Safest Vehicle on the Road at Any Speed!—And Cuts Costs Too.

Truxmore Is Made in 5 Sizes
for All Trucks

TRUCK EQUIPMENT CO., Inc.
1791 Fillmore Ave., Buffalo, N. Y.



Announces

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AS DISTRIBUTORS FOR LINTERN SANDERS


● Consult your nearest
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Lintern Sanders on trucks,
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LINTERN CORPORATION

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SAVE LIFE AND PROPERTY
WITH SANDERS



PEEL

QUICK, PROFITABLE BEARING ADJUSTMENTS

Simply peel the precision laminations ... one or more at a time. Accurate adjustments right at the job! No filing. A smooth-as-glass surface—always. Standard for all makes of engines. (Also with patented soft babbitt tips for pressure-lubricated systems.) **PEEL 'EM FOR PROFIT.**

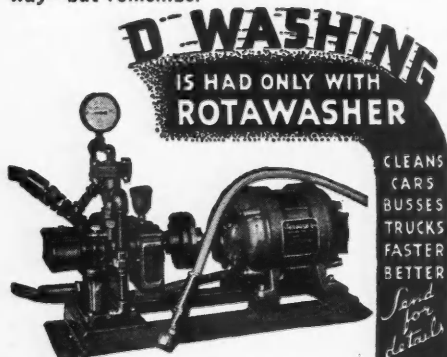


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Slash Dollars Off Cleaning Costs! Use New Streamline **SPEED WASHING**

Saves time, saves labor, saves money. That's why concerns everywhere are adopting **SPEEDWASHING**. Get these cost-cutting facts **TODAY**—send for our new Folder. **SPEEDWASHING** is the better, modern way—but remember



THE ROTAWASHER CORP.
122 E. St. Clair Ave., Cleveland, Ohio

(CONTINUED FROM PAGE 107)

five miles to their site by Gerosa trucks. The statues totaled 70 tons, representing two blocks, each block 8 feet wide, 8 feet high and 12 feet long. Houses were first built over the blocks and sculptors worked inside these houses which were later transported on the Gerosa units. One block, 11 feet wide, 17 feet long, traveled on a trailer from New York to Washington, eventually being carved into a statue commemorating the Titanic disaster. The Gerosa trailer made this trip in close to 40 hours, averaging 18 miles an hour.

Hauling has multiple phases as may be gleaned from a side glance at steel construction. According to steel factors, from 75-85 per cent of steel fabricating costs may be saved by having steel parts riveted at the mills instead of at the actual place of construction. But where is the equipment and facilities for hauling 100-ton trusses and similar weights many miles? Gerosa answers this by undertaking such hauling jobs.

For example, recently, the New York Central elevated its tracks in a certain section of New York City. To complete the elevation, 100-foot steel sections were necessary. These were brought by Gerosa trucks and lifted into place with ease. Again, at the West Side Express Highway of New York, sections, 97 feet in length and complete, even to the railing, were supplied ironworkers at the rate of half a dozen a day. As a result, considerable time and money was spared the city.

MUCH of the secret of Gerosa's outstanding service lies, of course, in equipment. But it begs the question, for the equipment, built to specifications, is the result of a highly unique and specialized experience, probably second to none in the East. And indication of the extent to which Gerosa equipment stands up under tests of severe strain was seen not long ago when despite extreme taboos as to manholes in heavy hauling, an 80-foot trailer passed over a manhole without even

DETROIT COMPENSATING AXLE

The first practical mechanical device to provide an automatic camber for semi and trailer axles, thus insuring longer tire life and marked fuel savings.

For detailed information write or wire.

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SAVING
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THE DEARBORN LINE

**CAB OVER ENGINE
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ADDS A CAB-FUL OF PAYLOAD

The same wheelbase yields one-third to one-half more load capacity with no increase in operating cost. An easily-opened hood insures ready service accessibility.

See your nearest Ford dealer or write us.

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Be Sure to Specify

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**POWER BRAKE
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Complete Kits Available at your
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"PERFECT SEAL"

AS SPECIFIED BY
16 OF THE LEADING
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PROTECTS YOUR
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AGAINST SEEPAGE
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RED INSUL

- Insulates
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Be Wise—Insul-ize

Stop current leakage.

End hard starting and motor stalling in wet weather by INSUL-IZING.

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Sterling MOTOR TRUCKS

DIESEL AND GASOLINE

Sterling trucks—built to meet present day operating requirements—provide:

**Safer Transportation
Greater Economy
Superior Performance
Longer Life**

Select Sterlings for dependable, economical service—there is no job too tough for them.

STERLING MOTORS CORPORATION
MILWAUKEE WISCONSIN

VOLT-O-MATIC GENERATOR

...Shoulders the Battery's Burden...

Write for booklet that tells how

UNITED AMERICAN BOSCH CORP.
SPRINGFIELD, MASS. New York, Chicago, Detroit

BACKED BY HALF A CENTURY OF GLASS MAKING

Insist on Duplate Safety Glass when you buy new equipment. And for replacement of glass in present equipment, call your nearest Duplate Dealer, listed in the "Where To Buy It" section of your telephone book.

Duplate

Print PITTSBURGH *Glass*
PLATE GLASS COMPANY

DOUBLE TIRE LIFE

WITH

DRAKE

TIRE REGROOVERS

●Rugged Construction.
●Price complete with stand—4 blades—6" rubber cord only

150 Watt Heating Head

Send at once for catalog

\$5.00

DRAKE ELECTRIC WORKS, INC.

3656 LINCOLN AVE.

CHICAGO, ILL.

cracking the cover. The weight on the trailer had been so evenly distributed, the manhole never knew the difference!

Frequently, Gerosa, because of its unique position as one of the most outstanding heavy haulage firms in the East, receives the opportunity of being in the foreground of many noteworthy parades. Such an occasion was afforded at the end of the late Wiley Post and Harold Gatty's trip around the world. when the red and white Lockheed monoplane of these two men, the Winnie Mae, after landing at Roosevelt Field, proved too wide-winged to tow across any bridge into Manhattan for a welcome planned. The plane was placed on a barge on the East River, unloaded at 57th Street and towed down Fifth Avenue on a Gerosa gooseneck trailer. Gar Wood's Miss America X presented a delicate problem of transportation with its 8 tons of engine encased in a fragile hull with danger of excessive jarring cracking the hull. Gerosa trailers took this boat to Atlantic City, N. J., from New York for exhibition there, the boat arriving in tip-top shape. Coney Island's Mardi Gras furnishes an opportunity for Gerosa trailers, its float winning prizes for size as well as display.

Although not a job in heavy haulage, transporting the world's largest rug from a steamer to the Waldorf-Astoria Hotel involved its planning. The rug, hand-tufted, was 70 feet in length and 50 feet wide. Thirty skilled workers had spent 10 months tying the 12,600,000 knots the rug contained. Together with a small rug shipped with it, total weight of this cargo was 5½ tons.

As the trailer, conveying the rug, reached the Waldorf, it found a power crane waiting. The crane swung the huge box containing the rug onto the sidewalk. The haul was then placed on a dozen piano dollies and carted into the lobby of the Waldorf. The reverse of this was seen when, subsequently, the same rug was shipped out for cleaning.

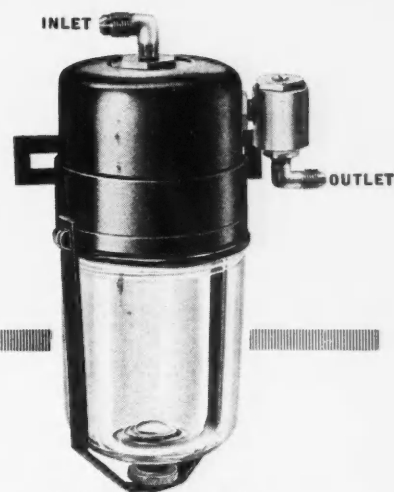
Perhaps one of its most unique undertakings was the "rescue of the (TURN TO NEXT PAGE, PLEASE)



THORNTON FOUR REAR WHEEL DRIVE

Gives any 1½ ton truck 26,000 lbs. gross capacity. 8 Speeds. Takes any type of body 8' to 20'. Big saving on first cost, operating cost and upkeep. Greater safety, more traction. Get the data.

Thornton Tandem Company
5136 Braden St., Detroit, Mich.



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**Nationally Known Fleets
Drastically Cut Oil
and Gas Bills with**

OILDEX

K & S OIL DILUTION EXTRACTOR

Oildex draws vapors from the crankcase and filters them thoroughly. Heavy particle, dirt, excess water, etc., are deposited in the glass jar which is easily emptied. The purified oily vapors are introduced into the intake manifold under automatic volume control for useful consumption.

Oildex thus brings about unusual oil and gasoline efficiency and economy by causing constant forced crankcase ventilation, positive upper cylinder lubrication, and quick detection of water leaks either from cracked blocks or leaky gaskets. Valves are kept free, carbon is reduced and even eliminated, harmful acids and sludge are removed from the oil, and water dilution is quickly checked.

Ask us for actual performance records in national fleets.

FILTREX SERIES OIL FILTER

A new oil filtration efficiency is made possible for fleets with the Heavy-Duty Replaceable Cartridge Type Filtrex. The three distinct filtering mediums are semi-floating and operate under partially balanced pressure to assure their complete utilization. Thus the pressure which otherwise hinders complete filtration is eliminated. Filtrex, by reason of its scientific construction, lasts longer, never leaks, and the cartridge is cheaper, and is more easily replaced than conventional filter cartridges.

Ask your jobber, or write for prices, sizes.

K & S MOTOR PRODUCTS, INC.

HILLSIDE

N. J.



Pat. Pending



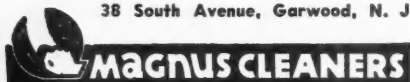
We're saving a copy for you!

You owe it to yourself, as a fleet operator, to have a free copy of our new 48 - page illustrated "AUTOMOTIVE CLEANING HANDBOOK." It contains up-to-the-minute answers to all your questions—asked and unasked—on modern cleaning methods in fleet maintenance work.

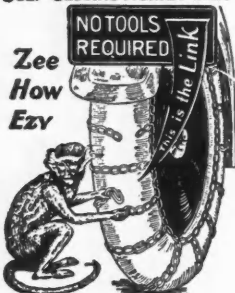
Simply write to us today on your letterhead. Your copy of this FREE book will be sent to you promptly.

MAGNUS CHEMICAL COMPANY

38 South Avenue, Garwood, N. J.



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FREE Samples To Fleet Owners

Self-Closing Monkey Links

Write us for free samples and state how many trucks are in your fleet and what size they are. We will mail samples immediately.

Why Buy New Chains?

Repair With Monkey Links

Your chains aren't worn out when the cross links start to let go. Repair with Monkey Links. Your drivers can do it on the road. No tools required. No appreciable time lost. Chains as good as new. Save money. Increase safety. Send for your FREE SAMPLE now.

Flower City Specialty Co.

ROCHESTER, NEW YORK
At All Reputable Jobbers

For running-in new and rebuilt engines use auxiliary lubricants containing "dag" Brand colloidal graphite.

Acheson Colloids Corporation

Port Huron  Michigan

*REG. U. S. PAT. OFF.

(CONTINUED FROM PAGE 109)

stranded trolley cars." These cars were, in reality, the by-play of a bit of underhand politics. Here is what happened on the surface.

A certain street car company, nameless, for reasons, lost its franchise in White Plains. Twelve miles from New York a repaving job saw the ripping out of car tracks and the virtual isolation of 36 cars which had been desired in New York City. It looked as though the particular company was in a fix and it knew it.

In order to get these 36 trolley cars past the break, Gerosa was called in. White Plains was inundated with Gerosa trucks with special trailers carrying short sections of track. Manned under their own power, the 22-ton street cars were run up on the trailers. These trailers were driven six miles to Harrison, a neighboring town, and there the cars were run off on tracks that connected with Manhattan. Each truck accounted for six of the trollies and at the end of week, the 36 cars were safe and free where it had been intended to have them.

THERE is an endless list of hauling jobs to Gerosa's credit, unique in their application of engineering skill as well as extraordinary facilities in the way of equipment. Under guidance of Mr. Gerosa, even greater feats are planned. A 140-foot boom to cost \$30,000 is being contemplated, with a capacity that has been estimated at 7 tons. This boom, when completed, will serve to revolutionize building construction if Mr. Gerosa is to be quoted as an authority. Piecemeal construction such as obtains today is to pass and organizations like Gerosa and others will come to see the potentialities of tremendous booms, of cranes to expedite and deliver tremendous weights and trusses.

Mr. Gerosa sees hauling as only a phase of the service rendered by transportation units like his. It is not merely that Gerosa engineers go over routes, investigate strains and stresses, study engines and contrivances that raise and

FWD Trucks

are available in sizes ranging in capacities from 1½ to 15 tons.

Write for bulletin

The Four Wheel Drive Auto Co.

Clintonville, Wis.

Kitchener, Ontario, Canada

CUT YOUR LIGHTING

COSTS in HALF with the No. 71

HY-POWER

Dual Clearance and Side Marker Lamp



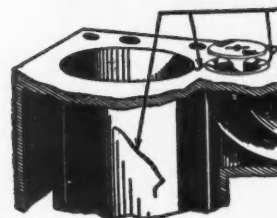
Does double duty. Only 4 required in place of eight. Dust-proof, Water-proof. Weather-proof. A single mounting that serves two purposes.

See your jobber or write.



AMERICAN AUTOMATIC DEVICES CO., CHICAGO

Make 1 Repair—and Forget It WONDER WELD



Get your trucks back on the road to stay. Wonder Weld seals valve port and inside cylinder cracks in 30 minutes. A permanent repair. Write for details.

MILLER MFG. CO.

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"Supervised Transportation"



1st

and the last word in governors

Write for complete information — there is a MONARCH distributor in your area.

MONARCH GOVERNOR CO., DETROIT

A ROLL-ABOUT Groover Solves Re-Grooving Problems

Here's the way to safe, easy, and inexpensive re-grooving. Just push a Roll-About under each wheel and, without electric current, put a 1937 anti-skid tread on a 1936 tire in 5 minutes. A Roll-About requires no skill, cuts fast and clean with minimum loss of rubber. And your tires are safe and within safety regulations! At your jobber's, or write.

SAFE TOOL MFG. CO.

Dept. 100

Bridgeport, Pa.



NOCO-OUT HOSE CLAMPS

THE HOSE CLAMP WITH THE THUMB SCREW

Standard equipment of the automotive industry. Adjustable — one size equals many. Quick tightening, perfect seal. At all Jobbers.

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WITTEK MFG. CO.
4305 W. 24th Pl., Chicago, U. S. A.

KINNEAR TRUCK DOORS
Also Doors for Buildings



ALL METAL . . .
Coils like a window-shade, out of the way . . .
CONVENIENT BURGLAR PROOF FIRE PROOF MORE DURABLE
Write for Details
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Manufacturing Company
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OSHKOSH
4 Wheel Drive Trucks

A proven product. 1½ to 10 ton capacity. Write for complete information.

OSHKOSH
Motor Trucks, Inc.
Oshkosh, Wis.

FULLER
TRUCK TRANSMISSIONS

For easy shifting, quiet operation, hauling power and dependability, be sure to choose trucks equipped with FULLER'S.

FULLER MFG. CO.
KALAMAZOO, MICH.

SEALED POWER PISTON RINGS

Best in Old Cars!  Best in New Cars!

pull. Emphasis is placed by the Gerosa organization on the kind of estimate it likes to give. For instance, where construction is involved, a builder or engineer is supplied not only with the cost of hauling but with a complete picture of the entire job and providing him with the amount of total expenditure as it affects a complete undertaking. All this as part of the hauling service!

As for maintenance, constant checking and rechecking results in equipment being disposed of after ten years of continuous service for often as much as one-third its original value.

The extent to which the Gerosa firm plans for the future and its reputé as a reliable source for future problems of hauling was revealed when the engineers who built the George Washington Bridge, connecting New York and New Jersey, consulted Gerosa for estimates as to possible future loads, these engineers feeling that if any unusual strains might be encountered on the bridge, Gerosa of all agencies would know about them.

Servicing Warner Brakes

(CONTINUED FROM PAGE 38)

14. At three places wedge armature away from drum to its full travel.

15. Place long ends of gage against armature face.

16. Slide adjustable rod against bearing shoulder and tighten thumb screw in gage. The distance D from collar to gage is the armature depression after assembly. If this is greater than 9/64 in. shim bearing out at seat A. If under 9/64 in. shim out armature ring at B. Permissible variation 1/64 in. The magnet must wear grooves in armature to insure proper contact.

Very Weak Brakes

17. Check lining to see that it is type recommended by factory and in good condition and free of grease.

18. Check magnet facing to see if it is glazed. If it is, it is due to a foreign substance and magnet should be

(TURN TO NEXT PAGE, PLEASE)

"PEEP-HOLE" VISION

Causes Accidents

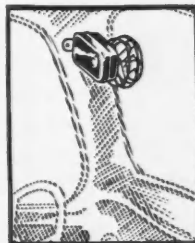


ALLIANCE POWR-PAKT Windshield Defroster

ENDS BLIND DRIVING

Winter driving is a hazard at best. Watch out for frosty windshields! Give your drivers a "break"—equip your fleet with Alliance Powr-Pakt Windshield Defrosters. It means better maintenance of schedules—fewer accidents—lower operating costs.

The Alliance Powr-Pakt Defroster is powerful—it delivers sufficient volume of air to keep the windshield clear at all times, yet it uses one-sixth to one-tenth the power of other fan defrosters. Does not slow down—speed is constant. Easily installed anywhere in the cab—ball and socket mounting holds fan in any desired position. Sturdily constructed, built to give years of dependable, trouble free service. Finished in chocolate brown enamel which does not reflect light. Investigate the Powr-Pakt Defroster now. For information and prices, write



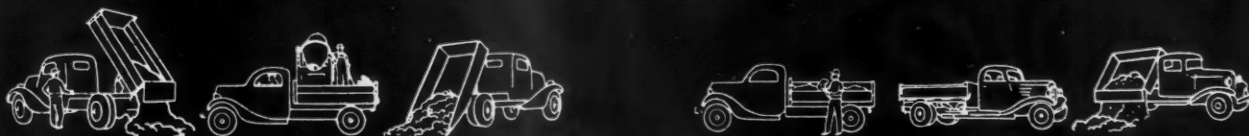
Mounted on left windshield post



Mounted on dash. Each fan also equipped with clamp for steering column mounting

ALLIANCE MFG. CO.
ALLIANCE • OHIO

A ST. PAUL HYDRAULIC HOIST AND BODY FOR EVERY MODEL OF TRUCK



25 Years of Successful
Manufacture of Hydraulic
Hoists for Motor Trucks.

St. Paul
HYDRAULIC
HOISTS & BODIES

ST. PAUL HYDRAULIC
HOIST COMPANY
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Minneapolis, Minn.

The First Cost Is The Final Cost On SPONGEX SEAT CUSHIONS

They Are Economical Because They:

1. Last Longer
2. Don't Pack Down
3. Are Odorless
4. Are vermin-proof
5. Give Maximum Comfort
6. Satisfaction Guaranteed

Leading truck and bus operators prove these points in daily use. Send us sizes and your next order for replacement or new equipment.



Dept. C

The SPONGE
RUBBER PRODUCTS CO.
DERBY, CONN.

Specify MILEY Brake Lining

Nine types that not only assure the correct friction but the correct structure and best braking material for each brake.



MILEY BLACK GOLD is the only metal base lining Dense as cast iron, it is the best for Bendix, Lockheed, Steeldraulic, and Huck brakes—for all "depression year" mechanisms and others that compensate for lack of drum area with extreme operating pressure.

MILEY EBONITE Heavy Duty, a new zinc wire, synthetic resin, semi-moulded, that comes in rolls, sets, and on Miley Ready Lined Brake Shoes. Strictly heavy duty lining—that gives 2 wheel brakes 4 wheel power and steps up 4 wheel brakes to power-brake performance. The best lining for Fords, Heavy Trucks and External Brakes.



Write for
Samples and
Data Book

L. J. MILEY CO., Inc.
1470 S. Michigan Ave.
CHICAGO, U. S. A.

(CONTINUED FROM PAGE 111)

dressed with coarse emery cloth or faced lightly on a lathe. Do not cut pole faces down.

19. Make sure that stop light is not connected into brake circuit. If it is, the graduation of the current as it passes through, the controller is changed, resulting in weak or grabbing brakes.

20. Check controller if tractor brakes have been adjusted. Change in pedal travel throws controller out of adjustment and it must be reset to cover full range with new pedal travel.

21. Check magnet-armature contact as previously outlined.

22. Check all wiring and connections.

23. Check wheel bearings.

Grabbing Brakes

24. Check wheel bearings, hubs, loose axle or loose king pins.

25. Make sure that brake lining is in good condition, tight on the rivets and free of grease.

26. Check concentricity of drums.

27. Check for distorted brake bands using gage supplied by the Warner Electric Brake Mfg. Co. Straightening is done with ball peen hammer.

28. Check brake band and magnet springs.

29. Check contactor arm in controller for pits.

30. Check bushing in magnet.

31. Check all wiring and connections.

32. Check controller and contactor blade spacing in controller.

Dragging Brakes

33. Check setting of foot control.

34. Check magnet-armature spacing.

35. Check springs in hand control and brake bands.

36. Check concentricity of brake drums, and backing plate.

37. Check bands for distortion.

Noisy Brakes

38. Check brake lining.

39. Check wheel bearings.

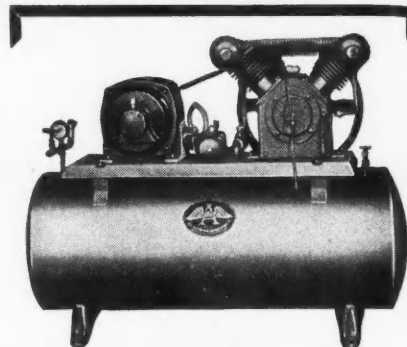
40. Check drums for concentricity.

41. Check brake bands for distortion.

EXPANSIONS

INTERNATIONAL Harvester Co., Chicago, has awarded the general contract for the erection of a new \$4,000,000 truck engine plant at Indianapolis to the J. L. Simmons Construction Co. Work will begin immediately on the central manufacturing buildings.

THE FOUR WHEEL Drive Auto Co., stepping up production in its Clintonville plant to meet orders, has purchased \$125,000 in new machinery and equipment including \$20,000 for heat-treating equipment in its metallurgical department and many production machines.



DAYTON GIVES YOU—

Peak Capacities! . . .
Minimum expense! . . .
Years of Endurance! . . .

Because of Dayton's 52-year record of building Air Compressors *exclusively* you get certain benefits obtainable nowhere else when you demand the "Flying A" brand. You get Dayton's power, belt and motor saving "Centrifugal Unloader"—dust-proof crank case—V-belts—Timken bearings—specialized engineering—in a range of models from 1 to 60 ft., horizontal or vertical, Single and Two Stage or V Type.

Write for bulletin,
stating your needs.

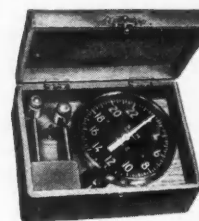
The Dayton Air Compressor Co., Dayton, Ohio



—the trucks that are
"BUILT TO MEET
A CONDITION"

THE **HUG** COMPANY
Highland • Illinois

JONES PORTABLE TACHOMETER



The world's largest operators of commercial vehicles use Jones Portable Tachometers to check engine speeds, for tune-ups, and setting governors, etc. Here are a few: Standard Oil Co., of La., N. J., N. Y.; Shell Petroleum Co., Atlantic Refining Company, Tidewater Oil Company, Keeshin Motor Express, Mack Trucks, Brockway, U. S. Navy.

Direct, instantaneous reading.

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450 WHITLOCK AVENUE

IT PAYS TO BUY

EDWARDS
QUALITY
SEMI-TRAILERS

EDWARDS IRON WORKS, INC.
SOUTH BEND, INDIANA